

UNIVERSITY OF
ILLINOIS LIBRARY
AT URBANA-CHAMPAIGN
BIOLOGY

DEC 12 1991

1000

80.5
213
0.2
0.24

FIELDIANA

B64

Botany

NEW SERIES, NO. 24

The Ethnobotany of Chinchero, an Andean Community in Southern Peru

Christine Franquemont

Timothy Plowman

Edward Franquemont

Steven R. King

Christine Niezgoda

Wade Davis

Calvin R. Sperling

March 30, 1990

Publication 1408

PUBLISHED BY FIELD MUSEUM OF NATURAL HISTORY

Information for Contributors to *Fieldiana*

General: *Fieldiana* is primarily a journal for Field Museum staff members and research associates, although manuscripts from nonaffiliated authors may be considered as space permits.

The Journal carries a page charge of \$65.00 per printed page or fraction thereof. Payment of at least 50% of page charges qualifies a paper for expedited processing, which reduces the publication time. Contributions from staff, research associates, and invited authors will be considered for publication regardless of ability to pay page charges, however, the full charge is mandatory for nonaffiliated authors of unsolicited manuscripts. Three complete copies of the text (including title page and abstract) and of the illustrations should be submitted (one original copy plus two review copies which may be machine-copies). No manuscripts will be considered for publication or submitted to reviewers before all materials are complete and in the hands of the Scientific Editor.

Manuscripts should be submitted to Scientific Editor, *Fieldiana*, Field Museum of Natural History, Chicago, Illinois 60605-2496, USA.

Text: Manuscripts must be typewritten double-spaced on standard-weight, 8½- by 11-inch paper with wide margins on all four sides. If typed on an IBM-compatible computer using MS-DOS, also submit text on 5¼-inch diskette (WordPerfect 4.1, 4.2, or 5.0, MultiMate, Displaywrite 2, 3 & 4, Wang PC, Samna, Microsoft Word, Volkswriter, or WordStar programs or ASCII).

For papers over 100 manuscript pages, authors are requested to submit a "Table of Contents," a "List of Illustrations," and a "List of Tables" immediately following title page. In most cases, the text should be preceded by an "Abstract" and should conclude with "Acknowledgments" (if any) and "Literature Cited."

All measurements should be in the metric system (periods are not used after abbreviated measurements). The format and style of headings should follow that of recent issues of *Fieldiana*.

For more detailed style information, see *The Chicago Manual of Style* (13th ed.), published by The University of Chicago Press, and also recent issues of *Fieldiana*.

References: In "Literature Cited," book and journal titles should be given in full. Where abbreviations are desirable (e.g., in citation of synonymies), authors consistently should follow *Botanico-Periodicum-Huntianum* and *TL-2 Taxonomic Literature* by F. A. Stafleu & R. S. Cowan (1976 *et seq.*) (botanical papers) or *Serial Sources for the Biosis Data Base* (1983) published by the BioSciences Information Service. Names of botanical authors should follow the "Draft Index of Author Abbreviations, Royal Botanic Gardens, Kew," 1984 edition, or *TL-2*.

References should be typed in the following form:

Croat, T. B. 1978. Flora of Barro Colorado Island. Stanford University Press, Stanford, Calif., 943 pp.

Grubb, P. J., J. R. Lloyd, and T. D. Pennington. 1963. A comparison of montane and lowland rain forest in Ecuador. I. The forest structure, physiognomy, and floristics. *Journal of Ecology*, 51: 567-601.

Langdon, E. J. M. 1979. Yage among the Siona: Cultural patterns in visions, pp. 63-80. In Browman, D. L., and R. A. Schwarz, eds., *Spirits, Shamans, and Stars*. Mouton Publishers, The Hague, Netherlands.

Murra, J. 1946. The historic tribes of Ecuador, pp. 785-821. In Steward, J. H., ed., *Handbook of South American Indians*. Vol. 2, *The Andean Civilizations*. Bulletin 143, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Stolze, R. G. 1981. Ferns and fern allies of Guatemala. Part II. Polypodiaceae. *Fieldiana: Botany*, n.s., 6: 1-522.

Illustrations: Illustrations are referred to as "figures" in the text (not as "plates"). Figures must be accompanied by some indication of scale, normally a reference bar. Statements in figure captions alone, such as "× 0.8," are not acceptable. Captions should be typed double-spaced and consecutively. See recent issues of *Fieldiana* for details of style.

All illustrations should be marked on the reverse with author's name, figure number(s), and "top."

Figures as submitted should, whenever practicable, be 8½ × 11 inches (22 × 28 cm), and may not exceed 11½ × 16½ inches (30 × 42 cm). Illustrations should be mounted on boards in the arrangement to be obtained in the printed work. This original set should be suitable for transmission to the printer as follows: Pen and ink drawings may be originals (preferred) or photostats; shaded drawings must be originals, but within the size limitation; and photostats must be high-quality, glossy, black-and-white prints. Original illustrations will be returned to the corresponding author upon publication unless otherwise specified.

Authors who wish to publish figures that require costly special paper or color reproduction must make prior arrangements with the Scientific Editor.

Page Proofs: *Fieldiana* employs a two-step correction system. The corresponding author will normally receive a copy of the edited manuscript on which deletions, additions, and changes can be made and queries answered. Only one set of page proofs will be sent. All desired corrections of type must be made on the single set of page proofs. Changes in page proofs (as opposed to corrections) are very expensive. Author-generated changes in page proofs can only be made if the author agrees in advance to pay for them.

FIELDIANA

Botany

NEW SERIES, NO. 24

The Ethnobotany of Chinchero, an Andean Community in Southern Peru

Christine Franquemont

*Institute of Economic Botany
New York Botanical Garden
Bronx, New York 10458*

†Timothy Plowman

*Department of Botany
Field Museum of Natural History
Chicago, Illinois 60605-2496*

Edward Franquemont

*Institute of Andean Studies
P.O. Box 9307
Berkeley, California 94709*

Steven R. King

*Board on Agriculture
National Research Council
Washington, D.C. 20418*

Christine Niezgoda

*Department of Botany
Field Museum of Natural History
Chicago, Illinois 60605-2496*

Wade Davis

*Institute of Economic Botany
New York Botanical Garden
Bronx, New York 10458*

Calvin R. Sperling

*Germplasm Services Laboratory
U.S. Department of Agriculture
Agricultural Research Service
Beltsville, Maryland 20705*

Accepted November 1, 1988

Published March 30, 1990

Publication 1408

© 1990 Field Museum of Natural History
Library of Congress Catalog Card Number: 89-85570
ISSN 0015-0746
PRINTED IN THE UNITED STATES OF AMERICA



TIMOTHY PLOWMAN
1944–1989

We dedicate this volume
with love and gratitude
to Tim Plowman,
who brought us all together
and showed us the way

Table of Contents

PREFACE	vii
ABSTRACT	1
INTRODUCTION	1
CHINCHERO: THE SETTING, AN ANDEAN TOWN	2
LOCAL GEOGRAPHY	10
METHODS	14
CULTIVATED PLANTS IN CHINCHERO	19
EXPLANATION OF FORMAT	
Species Information	29
Informant Biographies	31
Note on Quechua (Qichuwa) Orthography	32
LIST OF CHINCHERO PLANTS	
Fungi	32
Lichens	33
Algae	34
Mosses (Musci)	34
Liverworts (Hepaticae)	35
Ferns and Fern Allies	36
Gymnosperms	40
Angiosperms	41
CONCLUSION	107
ACKNOWLEDGMENTS	107
LITERATURE CITED	108
INDEX OF LOCAL NAMES	111
GENERAL INDEX	122

List of Illustrations

1. The town of Chinchero, built on Inca ruins	3
2. The site of a Sunday barter and commercial market in Chinchero	4
3. Two teams of three men plowing with <i>chakitaqla</i> (Andean footplow) in field above Lake Piuray	5
4. Map of Chinchero, showing location of zones and communities	6
5. A river cut dividing the western plains and the eastern hills of Chinchero	7
6. A <i>minkha</i> labor group, assembled for the day, resting after harvesting potatoes	8
7. Members of an <i>ayni</i> group work together, hoeing in a potato field, in a lifelong relationship of labor exchange	9
8. An <i>ayni</i> group works together to construct a new house	11
9. Schematic map of Chinchero	12
10. Mountain reflected in a pond on the pampa of Yanacona	13
11. Puqpuq waterfall said to be inhabited by <i>sirena</i> (Sp.), the malignant female spirit	15
12. Mother and daughter peeling potatoes in house courtyard	16
13. An <i>ayni</i> group accomplishing first hoeing of potato field with attendant ritual	20
14. Harvest of <i>maway</i> (irrigated) fields	21
15. Tops of plants from <i>maway</i> (irrigated field) used as fodder	22
16. A woman adding to a pile of potatoes being harvested by a group of people working in <i>minkha</i>	23
17. Anisetto Huaman and his wife posing in front of Anisetto's household garden of herbs and ornamentals raised for use, sale, and curiosity	26
18. A <i>ch'asti</i> , an adolescent role in dance groups and fiestas, cleaning wheat	28
19. Woman displaying <i>lisas</i> (<i>Ullucus tuberosus</i>) for sale or barter in Chinchero Sunday market	44
20. Woman washing <i>quinua</i> (<i>Chenopodium quinoa</i>) grains	50
21. Graciano Pumaaylli assembling stalks of <i>huamanpito</i> (<i>Columellia obovata</i>) for use in basket-making	51
22. Graciano Pumaaylli using hands and toe to begin weaving a basket	52
23. Ñilda Callañaupa gathering the flowers of <i>kiku</i> (<i>Bidens andicola</i> ssp.) to use for a yellow dye	54
24. Children carrying kindling after a day with flocks or in fields	61
25. Inflorescences of <i>awarunkhu</i> (<i>Puya werbaueri</i>), woody stems and leaves of <i>tayanqa</i> (<i>Baccharis tricuneata</i>), and <i>suytu</i> (probably <i>Eupatorium volkensisii</i>) are gathered and burned and their ashes made into <i>llipta</i> , an alkaline admixture chewed with coca	68
26. Maria Huaman and daughter pulverizing ashes of plants to make <i>llipta</i>	69
27. Liquid being added to the pulverized ashes so that they may be shaped into patties of <i>llipta</i>	70
28. Formed masses of <i>llipta</i> drying	71
29. Melchior CusiHuaman and neighbor laying bundles of thatch onto a new roof ..	73
30. Anisetto Huaman thatching a roof	74

31. Simeona Jaimes using a gourd as ladle to test *chicha* 75

32. Maria Livita straining boiled *jora* into a *raki* (*chicha* jar) through a layer of *ichu* (high-altitude grass spp.) on a basket ... 76

33. *Oca* (*Oxalis tuberosa*) cultivated for edible tubers 90

34. Tools used to cultivate tubers are locally made, especially of *chachaquma* (*Escallonia resinosa*): plow (usually *Eucalyptus*), *kutiq* (hoe and potato hook), *qhasuna* (clod-breaker), and *chakitaqlla* (footplow) 97

List of Tables

1. Wild plants forming part of diet 24

2. Origins of Chinchero cultigens 27

3. Minor cultivated plants 29

Preface

The goal of the Chinchero ethnobotanical project was to document, from an interdisciplinary perspective bridging botany and anthropology, the flora of a human community whose boundaries are political and cultural as well as geographic. The project developed from the long-term research in this town in the high Peruvian Andes of two of us (C.F., E.F.) which began with an exploration of the cognitive and practical worlds of Andean weavers (C. Franquemont & E. Franquemont, op. cit.). During a long period of association with Chinchero, we worked with members of the community in support of a range of projects, including cultivation of potatoes, laying of pipes for a potable water system, and activities of the school and the soccer league; in 1980 we took two *cargos* (sponsored the participation of two dance groups) for the town's annual celebration of the patron saint (Spanish, *fiesta patronal*).

Two problems illustrate our (C.F., E.F.) motivations in studying the ethnobotany of Chinchero. A specific question arose in conversations with Chinchero weavers. The town is home to one of the community-specific textile traditions that characterize the Cusco area (C. Franquemont, 1979, 1986; E. Franquemont & C. Franquemont, 1986, 1987). Like many other researchers, we wanted to understand the meaning of the woven designs. Since the designs had names, an obvious place to start was to translate those names. Several of the *pallay* (Quechua, 'design') names were said also to be the names of plants. One plant, *chili chili*, was particularly common; we were told that it grows "right around here anywhere," always followed by, "well, I don't see one right now, but . . ." Five years later when we undertook a complete survey of the plants of Chinchero, we still did not know which plant was *chili chili*. We were curious—was the design, an elaborated zig-zag, a picture of the plant, or a symbol for a sacred or valuable plant? In a sense, this work was undertaken to answer the question of the meaning of a category named *chili chili* and of many other categories as well. Those comparisons between plants and weaving designs were in themselves a question in taxonomy (C. Franquemont, 1986). *Chili chili*, in fact, is the name given to at least five plant species: Three are *Geranium* species, the fourth, an *Anemone*, and the fifth, a *Hydrocotyle*. All share an ornamentally scalloped leaf form, as does the central motif in the woven design.

Between 1979 and 1982 we (C.F., E.F.) worked

with Chinchero residents to establish a center for traditional culture located in Chinchero (C. Franquemont, 1982), a living museum designed to speak for traditional Quechua life in dialogue with the Spanish-speaking school system oriented to coastal culture. Segments of the project were dedicated to agricultural systems, textiles, fiestas, music, storytelling, and finally, plants. In 1982 we began a survey of the flora of the community of Chinchero as an extension of the ongoing work toward cultural preservation. It was clear that low esteem for traditional knowledge of the environment was working to put the people of Chinchero at a disadvantage with their more technologically advanced compatriots in a number of ways. First, prestigious wheat (in bread) and rice, both expensive imported commodities, were replacing locally grown foods such as *quinua* and even potatoes in the Quechua diet. Second, farmers' need for cash and the consumption patterns of the larger regional economy caused changes in agricultural strategies. Large areas of land were being planted to barley rather than Andean tubers, since the Cusco beer factory provided seed and guaranteed purchase of harvests. Farmers were restricting the diversity of their potato crops, in some cases influenced by government agricultural programs. Many farmers sought short-term gains in ignoring the traditional seven-year rotation system, relying on chemical fertilizers to maintain productivity. Third, the awe of modern medical technology such as injections and pills—progressive and lifesaving in some situations—was devaluing the daily practice of herbal medicine long used to maintain the health of the community. These examples suggest the urgency that the authors and the people of Chinchero saw at that time in documenting the local knowledge of plants.

One of us (T.P.) volunteered to coordinate the considerable botanical aspect of the project, and three of us (S.K., W.D., C.S.) agreed to collaborate as field botanists. Funding was secured through Earthwatch, Inc. With this team of six researchers, 19 energetic Earthwatch volunteers in two groups, and the residents of Chinchero with whom we had worked to create the cultural center, we were able in 1982 to complete an extensive survey of Chinchero flora.

Another year of fieldwork by one of us (C.F.) in Chinchero in 1985–1986 continued the ethnobotanical survey directing study specifically to the logic of Quechua plant classification (C. Franquemont, 1987).

The Ethnobotany of Chinchero, an Andean Community in Southern Peru

Abstract

An ethnobotanical study was conducted in Chinchero, Peru. The political district of Chinchero has an area of more than 135 sq km at altitudes between 3000 and 5000 m; the community's 18,000 residents form a cultural unit. A floristic survey was undertaken in 1982 as part of an ongoing ethnographic project on Chinchero culture. The methodologies of anthropologists and botanists were combined to elicit a complete understanding of the relationship of Quechua people and plants in this Andean environment. The study identified at least 507 plant species in 319 genera in 112 families, equivalent to more than 250 Quechua categories. For each species, the following information is provided: Latin binomial, geographic distribution, locality, habitat, local names, and ethnographic information. Even as Chinchero undergoes rapid acculturation, individuals maintain knowledge of plants' characters and uses in all aspects of daily life. We encountered 14 New World and 17 Old World species cultivated as food, tea, medicine, shelter, and commodities. In addition, both wild and cultivated plants play vital roles in ritual, myth, design, and local ecology. The results of this unique multidisciplinary research will be of use to a broad range of scholars.

Introduction

Ethnobotany has been an ill-defined discipline without an established methodology. The definition of ethnobotany remains problematic, since its first use in 1895 by Harshberger to refer to the study of "plants used by primitive and aboriginal people ..." (Ford, 1978, p. 33) and its more recent redefinition by Ford as "concerned with the to-

talidity of the place of plants in a culture and the *direct* interaction by the people with the plants" (Ford, 1978, p. 44). The form of an ethnobotanical study depends on its author's identification as cognitive anthropologist, botanist, archaeologist, or ecological or physical anthropologist, among others. Frequently, studies by one group are not useful or even intelligible to another. Many studies have concentrated on economics and utility, with an underlying theme of usefulness to our own society, but frequently ignoring the conscious or collective activities of people. Alternatively, the anthropological study of semantic domains, of naming systems, has been done by anthropologists, who often ignore the natural world in which those human activities take place.

The goal of research in Chinchero was to document, from this interdisciplinary perspective, the flora of a human community whose boundaries are political and cultural as well as geographic. Our work succeeds the remarkable ethnobotanical surveys of Berlin et al. (1974), *Principles of Tzeltal Plant Classification*, and Alcorn (1984), *Huastec Mayan Ethnobotany*, and follows the presentation used by Vickers and Plowman (1984). Ultimate inspiration came from the New World ethnobotanical studies of Richard Evans Schultes. In Chinchero, we attempted a collaboration between disciplines in a study which kept in mind the purposes and methods of both botany and anthropology. By providing a reporting format and a specific methodology for ethnobotanical plant collection and botanically relevant ethnography, the study tried to satisfy the goals of ethnobotany, to illuminate the human and cultural complexities of people's relationships with plants, in a work where both people and plants are visible.

The thousands of voucher specimens in the Chinchero collection represent at least 507 plant species in 319 plant genera in 112 plant families and some 250 local categories. Specimens come from nine communities of Chinchero between the altitudes of 3000 and 5000 m. Forty-two species are plants of Old World origin, one is from Australia, and the remaining species are native to the New World. The majority of species is limited in present distribution to the Andes. By our estimate, the collection represents 95% of the flowering plant species growing in Chinchero, including several species new to science, a number of plants never before reported from Peru, and a large number of plants collected for the first time from the Cusco area. Detailed ethnographic information accompanies virtually every plant specimen. The collection is the most comprehensive ethnobotanical survey ever done in the central Andes.

A variety of specialists have devoted their work to the ethnobotany of the Andean highlands, including ancient plant use (Towle, 1961). Both early priests (particularly Cobo) and the great European geographic expeditions (Ruiz and Pavón, Raimondi) took an interest in the broad range of cultivated and utilized plants they encountered (Herrera, 1937). Valdizán and Maldonado, Peruvian physicians, published a detailed work, *La Medicina Popular Peruana*, in 1922. The authors, in the nationalism of their era, sought to document the indigenous (Inca) roots of medical science in Peru; they were drawn to *curanderos* (Sp., 'healers') whom they saw as medical specialists like themselves. *Medicina Popular* includes an inventory of hundreds of Peruvian plants, identified to species and in some cases illustrated, and their uses.

Macbride began publishing the encyclopedic *Flora of Peru* in 1936, and by that time the prolific scholar Herrera had also begun his extensive documentation of the botany and ethnobotany of Peru, *Sinopsis de la Flora de Cusco* (1941), and numerous articles in the *Revista del Museo Nacional* (1933a,b, 1938, 1939, 1940a,b, 1942). Yacovleff and Herrera's work (1934–1935) on plant representation in ancient Peruvian art remains the standard.

Lira (1946), a Spanish priest working in Cusco, documented the uses of plants as medicines and as ritual paraphernalia; however, Lira did not identify plants by scientific name, severely limiting the usefulness of the work. Soukup (1970), also a priest, compiled a vocabulary of the local and scientific names of Peruvian plants from specimens

in Peruvian herbaria as well as from colonial and modern references, especially the *Flora of Peru* (Macbride, 1936 et seq.) Soukup's book is a source of a great deal of comparative information, with emphasis on highland and coastal plants. The data was rather uncritically assembled, however, and the book is cumbersome to use and limited by lack of information on the areas of Peru in which species occur.

More recently, a careful but unpublished study by Fisher (1976) was based on work in a pseudonymous highland village in the Department of Cusco. She identified more than 100 locally important plant species and gave the plants' local and scientific names, along with use information she collected from oral and written sources and pharmacopoeias. Brunel's dissertation (1975), also unpublished, analyzed the variation in plant classification in Chacan, a former hacienda bordering Chinchero. The work of the late Louis Girault on the healing inventory of the Kallawayas, a group of ritual and herbal healing specialists in Bolivia, is extremely well documented, but directed specifically at the Kallawayas pharmacopoeia (Girault, 1984). For Bolivia an extensive study by Cárdenas (1969) and a more superficial survey by Bastien (1982) document current plant use and herbal medicine; treatment of particular plants is well represented by the work of Carter (1978, 1980) on coca.

A number of authors have described the complexity of Andean agricultural systems, notably Leon (1964), Mayer (1974), Gade (1975), Brush (1977), Brush et al. (1981), Bristol (1968), and Orlove and Godoy (1986). Ongoing large-scale efforts will add a great deal to this knowledge, notably those in Cuyo Cuyo (Puno) led by Bruce Winterhalder and in the Department of Cusco continuing the work of the late César Fonseca. Johns and Towers (1981) and Johns and Keen (1986) explored the frontier between wild and cultivated plants.

Chinchero: The Setting, an Andean Town

Many people know Chinchero (fig. 1) as a small town near the city of Cusco in southern Peru with extensive Inca ruins and a colorful Sunday market (fig. 2). Each year, thousands of tourists visit Chinchero; most stay less than two hours. They do not realize that Chinchero is a political district



Explanation of photo credits: CCTC—Chinchero Center for Traditional Culture, a photographic archive maintained by C. and E. Franquemont; S.K.—Steven King; W.D.—Wade Davis; C.S.—Calvin Sperling.

FIG. 1. The town of Chinchero, built on Inca ruins (photo CCTC).

comprising 135 sq km of hills and plain, ranging between 3100 and 5000 m in altitude, and a culture area with some 18,000 residents. Since anthropologist Oscar Nuñez del Prado first worked there (Nuñez del Prado, 1949), a large number of cultural anthropologists and archaeologists have done research in Chinchero for varying lengths of time, much of which is, unfortunately, unpublished. Contreras's (1985) recent ethnography and Alcina Franch's (1976) report on the archaeology are the most substantial results yet published from this work.

Chinchero is located in the province of Urubamba, approximately 15 km northwest of the city of Cusco, and shares a border with the province of Cusco. The town center is 25 km from Cusco by paved road, and approximately 10 km from the town of Urubamba. Because Chinchero is at high altitude (3810 m at the town plaza) in a tropical latitude ($13^{\circ}17'S$), it has a climate of extreme contrasts between wet and dry seasons of the year and between hot days and cold nights. From May through September, dry, cold, and often windy

weather brings night temperatures at times below freezing, and intensely sunny days which may be as warm as $85^{\circ}F$. In striking contrast, during the wet season (October–April), frequent thunderstorms and rainy spells lasting as long as a week turn the land green and muddy, with temperatures more even, fluctuating between $45^{\circ}F$. and $60^{\circ}F$. An average yearly rain of approximately 840 mm falls almost entirely within these months. Measurements made in Chinchero between 1955 and 1961 (Freeman, 1963, quoted in Contreras, 1985) correspond to Tosi's classification of the area as very humid forest, having approximately 1,000 mm of rain per year (Tosi, 1960).

Chinchero remains fundamentally an agricultural community. The agricultural year has four stages: the sowing season before the onset of the heaviest rains (September–November), the rainy growing season (December–March), the season of plowing the fields to be planted the following year (April) (fig. 3), and the harvest season (May–June). Three seasons are locally designated: dry (Qu., *chaki*), May to the beginning of August; wind time



FIG. 2. Every Sunday Chinchero is the site of a barter and commercial market (photo W.D.).

(Qu.-Sp., *wayratiempo*), from August to November; and flowering time (Qu.-Sp., *tikaytiempo*), from December through April (Contreras, 1985). During the dry, windy months of June, July, and August, agricultural activities are limited to household-based work, including freeze-drying potatoes (Qu., *chuñu*) and other tubers, making and repairing tools, and any left-over sod-turning (Qu., *yapuy*; Sp., *barbicho*).

The physiography of Chinchero is of two types (map, fig. 4). The western area, a high rolling plain (Qu., *pampa*) at 3800 m, once formed the bed of a Pleistocene lake; to the east the lake bed is bounded by low limestone hills, rising into a series of steep granitic ridges that reach an elevation of 4600 m. Water remains in the lowest parts of the plain in the form of bogs, seasonal ponds, and two large lakes, while in the hills to the east, trapped water emerges from several reliable springs. The largest of these springs, Qorqor, is the current source of water for the city of Cusco. A large lake (Qu., *qucha*) called Piuray drains to the southeast toward Cusco; another called Huaypo drains to the Uru-

bamba River. (Although this river is properly called the Vilcanota, to avoid confusion, we refer to it as do Chinchero residents as the Urubamba, the name it takes at a lower altitude.) The Incas and later the Spanish took advantage of this water resource to build a series of canals (and later aqueducts) which carried those waters to Cusco (Sherbondy, 1982).

A deep water cut (Qu., *wayq'u*; Sp., *quebrada*) separating the western plain and eastern ridges of the Chinchero area drains the plain into the valley of the Urubamba river some 800 m below (fig. 5). The plain is intensively cultivated for Andean tubers and European grains, while the ridges serve for pasture or sparse tuber cultivation, and a few small fields at the very lowest part of the *quebrada*, approximately 3100 m, allow maize agriculture. A large area of high-altitude land above approximately 4000 m (Qu., *puna*), which cannot be used for cultivation, supports herding.

While the plain (Qu., *pampa*) is relatively uniform in character throughout Chinchero, the water cut harbors a special environment called *qhishwa*



FIG. 3. Two teams of three men plow with *chakitaqlla* (Andean footplow) in field above Lake Piuray (photo CCTC).

(Qu.). Between the approximate altitudes of 3100 and 3600 m, trapped moisture and heat allow the growth of a dense flora including plants larger in size than higher-altitude members of the same species. The hillsides above (Qu., *urqu*), especially on the eastern side where they are moister and better protected from wind, support the few remaining indigenous trees in the area (*Polylepis*, *Buddleja*, and others). Most of the wide range of wild plants known and used by Chinchero people grow on these slopes in the *qhishwa* and above.

We do not know when people first moved into the plain that is now Chinchero; the earliest published archaeological remains date from the Killke period immediately prior to the Incas. By Inca times Chinchero was a well-established focus of human activity, as evidenced by extensive remains of architecture and landscape modification (Alcina Franch, 1976). Large-scale terracing and walls of dressed limestone built in the tightly fitted polygonal style attributed to the Inca Period (ca. A.D. 1438–1532) provide the evidence of a large site with apparently administrative and ritual functions (Rowe, 1946; Niles, 1987). Chinchero

was the location of Topa Inca Yupanqui's royal estate (Niles, 1987; Alcina Franch, 1976).

The two major *ayllus* of Chinchero, Cuper and Ayllupunku (*ayllu* 'door' or 'gateway'), existed in Inca times, and people occasionally still refer to Cuper as *hanan ayllu* (Qu., 'upper community') and to Ayllupunku and Yanacona together as *hurin ayllu* (Qu., 'lower community'). In this description we use the word *ayllu* interchangeably with community (Sp., *comunidad*) to refer specifically to these recognized land-holding groups. Although in some cases this use is historically inaccurate, because the definition of *ayllu* is complex and has varied considerably, we continue to use the word to imply the unity and strength, stemming from a common cultural identity, of these groups of people. When the Spanish arrived (ca. 1533), each of these *ayllus* occupied a distinct hamlet between which lay the large area of Inca structures and terraces just mentioned.

Manco Inca burned the structures in Chinchero on his retreat from Cusco in about 1540, shortly after the Spanish Conquest (Alcina Franch, 1976, p. 147). By 1608 the Spanish had converted the

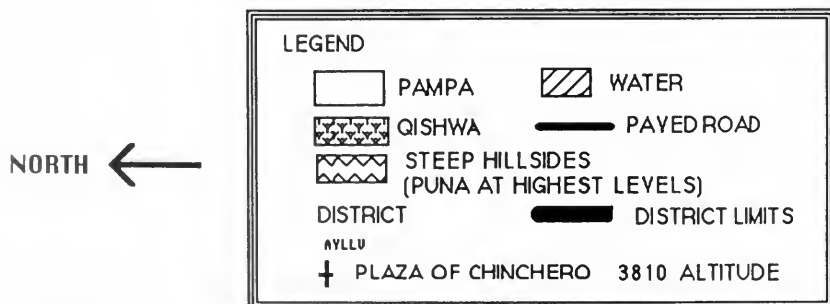
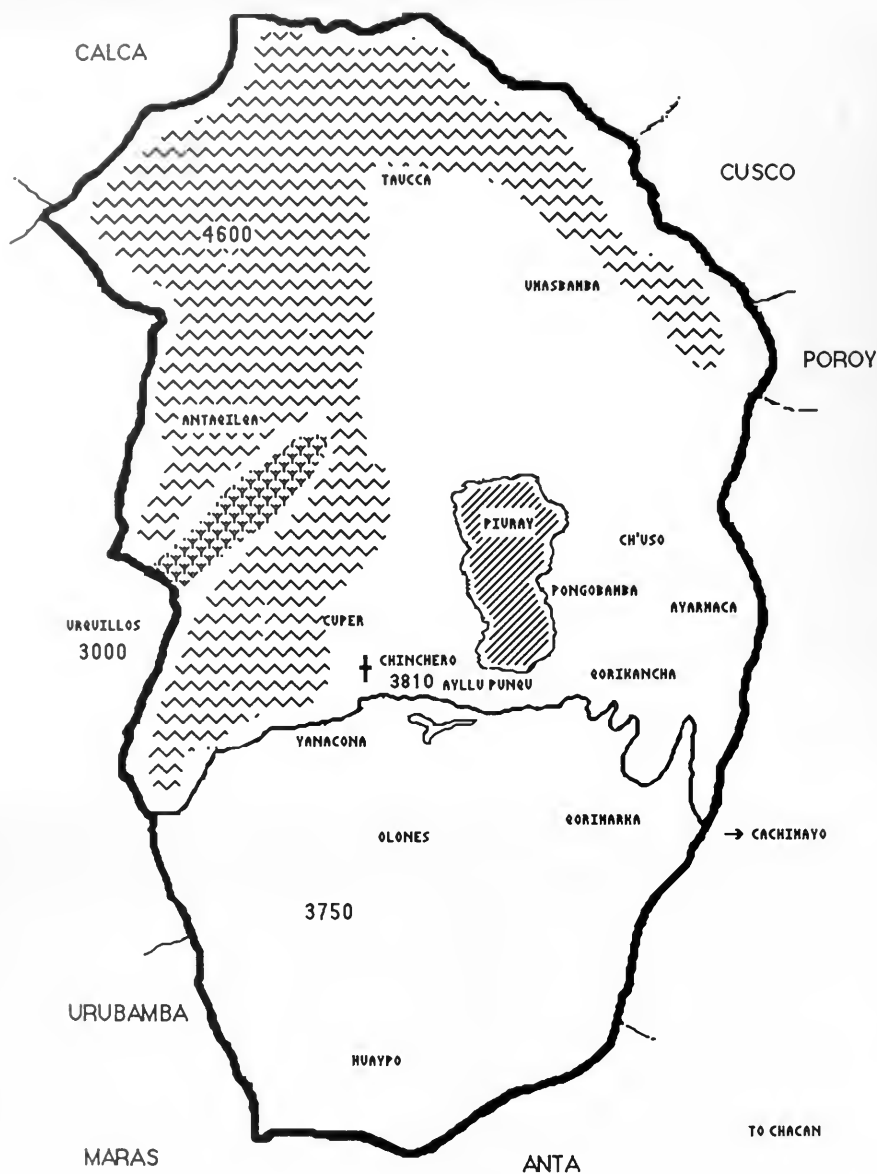


FIG. 4. Map of Chinchero, showing location of zones and communities.



FIG. 5. A river cut divides the western plains and the eastern hills of Chinchero. Waqkhata, on the near side, is a sector especially suited to growing grains; beyond are the lower slopes of Antakillqa hillside, used primarily for pasture and gathering (photo W.D.).

largest Inca building into a Catholic church. As required by the Spanish policy of reduction (Sp., *reducción*), the surrounding *ayllus* relocated to form the town that today surrounds the church. At that time several haciendas controlled large areas and numbers of people in Chinchero (Toledo, 1974; Alcina Franch, 1976). Just as the local Church was founded on ruins of Inca design, the modern communities represent the remains of Inca social structure, the *ayllu*.

Today the approximately 18,000 residents of Chinchero comprise a cultural group that both residents and outsiders identify by ethnic markers that include dress. They live in a total of 13 self-governing, land-owning communities that retain individual identities extending to agricultural practices and plant systematics. Chinchero was legally recognized in 1905 as an independent political district of the Federal Republic of Peru (Montalvo, 1965). The district of Chinchero should not, however, be thought of as a purely externally imposed political unit, because it follows existing cul-

tural boundaries recognized by both residents and outsiders.

Three lines of power and bureaucracy tie Chinchero to the national government: a governor (Sp., *gobernador*) named by provincial or departmental authorities, a mayor (Sp., *alcalde*) and council (Sp., *concejo*) now elected by town residents, and a judge (Sp., *juez de paz*) empowered to decide some local disputes between individuals (Contreras, 1985). These offices, which (with the exception of the judge) conduct their affairs in Spanish, were rotated until the 1960s among a few *mestizo* (Sp., 'non-Indian native') residents.

Chinchero center has been declared a legal Urban Zone (Sp., *Zona Urbana*). As of 1986 some 300 households cluster around the church and along the paved highway where the three primary *ayllus* of Cuper, Ayllupunku, and Yanacona meet. Another 15,000 people live dispersed or in smaller hamlets on the hills of Chinchero. Residences are gradually concentrating around the town center which is the site of the church, primary and sec-



FIG. 6. A *minkha* labor group, assembled for the day, rests after harvesting potatoes (photo CCTC).

ondary schools, a plaza with a large Sunday market of barter for produce and sale to tourists, and Inca ruins. Houses are also agglomerating along the paved road which links Chinchero in a tourist circuit with Urubamba, Ollantaytambo, and Pisaq. The major demographic trend in Chinchero, however, is out-migration to Quillabamba, Cusco, and Lima, while national culture in the form of language, dress, music, and money flows steadily into Chinchero.

Belying Chinchero's proximity to the city of Cusco, its inhabitants have a justified reputation for stubborn conservatism in thought, traditions, and institutions. Curiously, the residents of Chinchero also enjoyed this reputation of contrariness in early Colonial times (Sarmiento, 1907 [1572]) and in fact may have been a non-Inca ethnic group at that time, the Ayarmaca (Rostworowski, 1970). During Tupaq Amaru's rebellion in the 18th century, the people of Chinchero allied themselves with the Spanish under the leadership of a *cacique* (Spanish-recognized native leader), Mateo Pumacahua (Valcárcel Esparza, 1977). As recently as 10 years ago, their way of life still centered upon tuber agriculture, animal husbandry,

and textile production; the number of Chinchero people conversant in Spanish was small. Dress and weaving style are the most visible defining characters of the area. Many women still wear the multiple braids and handmade clothes that distinguish them from women of other Quechua-speaking communities. In the past 40 years, men have abandoned completely the traditional style of village-specific dress in favor of identity as part of an area-wide class of rural workers, and many women are also doing so. Cultural traits specific to Chinchero (or other Quechua communities), however, are by no means limited to clothing style. They extend into nuances of language use, technology, ritual life, and folklore, making the Cusco area a mosaic of local cultures united through shared economies, language, beliefs, and history.

Residents of Chinchero define their fundamental identity as members of one of the self-governing land-owning communities of Chinchero: Cuper, Yanacona, Ayllupunqu and others (see map, fig. 4). These communities survive from pre-Columbian social groups (Qu., *ayllus*) and in some cases from colonial annexes (Sp., *anejos*), outposts (Sp., *estancias*), and ranches (Sp., *haciendas*). The



FIG. 7. Potato fields are hoed twice during the growing season. Members of an *ayni* group work together in a lifelong relationship of labor exchange (photo C.S.).

government of Peru now officially recognizes the *ayllus* as independent entities; Umasbamba was the first to be recognized as an independent indigenous community in 1927 (Contreras, 1985). Each community has a distinct geographical definition, although all lands are not always contiguous. A high level of envy (Sp., *envidia*) among and between *ayllus* can be observed in the humorous nicknames they invent for each other: Yanacona is Yana Qhuña ('black snot'), Cuper is Waqcha Cuper ('impoverished' or 'orphaned Cuper'), and Ayllupunqu is Kullu Papa Suqsuq (because their potatoes are so small they have to be swallowed whole).

Ayllu members (Qu., *ayllu masi*, now more commonly called by the Spanish equivalent, *comuneros*) have rights to work the usufruct they own on lands within the *ayllu*, and also obligations. They must attend their *ayllu's* meetings (Sp., *asamblea*) and participate in a labor tax (Sp., *faena*) with which the *ayllu* maintains trails, roads, public buildings or a community business venture. Community members may work usufruct they own

within the boundaries of another *ayllu* if granted permission by that *ayllu's* meeting, in exchange for contributing money or collaborating with the labor tax. They may also participate in that *ayllu's* meetings, but do not have voting rights, which are reserved for residents.

Men have basic responsibility for agricultural organization and labor, although women help in the fields as needed and throughout the harvest season. Women also support agricultural activity through a parallel organization of intensive mutual hospitality. People seldom work alone, but rather form into groups based on any of several labor-sharing institutions. *Ayni*, the most common form of agricultural labor, is built of reciprocal labor exchange in which each worker is repaid by the owner of a field with a comparable day of labor. *Minkha* workers are compensated in some way by the end of the work day and do not receive exchanged labor from the owner (fig. 6). *Faena* is a labor tax which group members vote upon themselves for the common good. *Minkha* groups generally involve four or five workers, *ayni* commonly

assembles 10 or 12, while *faena* may mobilize hundreds of people in common enterprise. *Ayni* labor is a regular part of daily life during the plowing season (April), the harvest season (May–June), and the sowing season (September–November) (figs. 7–8).

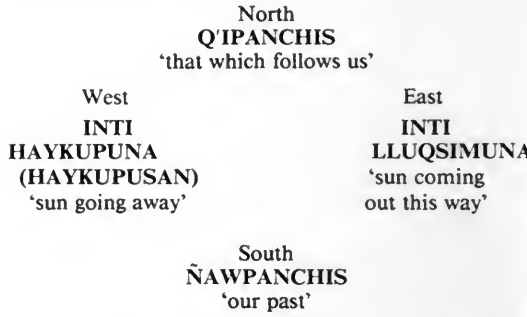
As in most Andean communities, people are changing. Through the growth of the tourist industry and increasing control over the profits from their produce and labor, they have been brought into the cash economy, even as farming becomes an increasingly unproductive activity. Traditional strategies, whereby planting was governed within each *ayllu* by sophisticated systems of crop rotation (Qu., *muuyuy*) through sectoral fallowing (Qu., *mañay* ‘sector’), are now breaking down under increased demand for cash crops. Low prices for agricultural products have also hurt farming and, in combination with the lure of work in the city, have discouraged many workers. Two other recent events have caused severe depletion of the agricultural economic base in Chinchero: (1) the completion in 1983 of a paved road passing from Cusco through Chinchero to Urubamba, and (2) the appearance of parasitic liver flukes (*Fasciola hepatica*) among sheep and camelid herds.

On the new paved road, the city of Cusco is only a half hour’s drive away. With virtually all children now attending school, most people in the central communities are now bilingual Spanish and Quechua speakers. In this process of change, many of the institutions and systems that have evolved gradually since pre-Columbian times are now disappearing. Like the condor and other large birds which are no longer seen in the skies over Chinchero, the last ritual specialist (Qu., *altumisayuaq*) is dead. Some traditional rituals persist only as subjects of reminiscence. As communities like Chinchero rise together to join an emerging pan-Andean culture that is beginning to make a place for itself in the international world, the distinct parts of the Andean mosaic are losing definition.

Local Geography

For the people of Chinchero, plants mark and are marked by an ecology they know and use intimately. The local view of environmental zones is determined by altitude and understood through plant and animal inhabitants and agricultural potential. They know the plant world in relation to the zones and feature of their local geography.

Chinchero sits at the intersection of four cardinal directions (see map, fig. 9).



Within the boundaries of Chinchero, the paths that people travel take them throughout the range of plant habitats, from corn fields at 3100 m to windy mountaintops at 4600 m. Quechua people define several broad ecological zones that are remembered in identifying plant categories: *puna*, *pampa*, and *qhishwa*. *Puna*, the high area above the tree line, occurs only in the communities of Cuper and Taucsa in lands above 4000 m. A diversity of high-altitude grasses collectively referred to as *ichu* characterize the lower part of this zone, including *Brachypodium mexicanum*, *Calamagrostis glacialis*, *Festuca dolichophylla*, *Festuca sublimis*, *Nasella* aff. *linearifolia*, *Nasella pubiflora*, and *Stipa ichu*. Camelids prefer these grass species as forage, but few camelids remain today on the slopes of Chinchero. Weberbauer (1945, p. 366) sets the lower limits of the *puna* in central and southern Peru as 3800–4000 m, giving as a general definition “that elevated region where agriculture becomes impossible.” Cusco area farmers do cultivate tubers within the *puna* zone by planting specialized cultivars, *ch'iri papas*, and by using a specialized technology called *ch'uiqi*, the practice of planting and cultivating tubers within holes dug in unplowed sod.

The highest lands are blanketed by “cushion plants” such as *Aciachne acicularis* and small clustered groups of low-growing, high-altitude forms of brightly flowered genera such as *Nototriche*, *Viola*, and *Werneria*. The ground here bounces underneath your feet as you walk. At high altitudes, many unrelated kinds of plants grow in this “cushion” growth form, which functions as protection from winds and frosts. Flowers with particularly large and intensely colored corollas characterize alpine floras. Although Weberbauer (1945, p. 387) found these flowers infrequent in the high Andes, several Chinchero residents pointed out to us the large and unusually colored flowers of such genera



FIG. 8. An *ayni* group works together to construct a new house (photo CCTC).

as *Nototriche* and *Gentianella* as characteristic of the *puna*. Weberbauer also noted these species, but considered them atypical.

A single but immense expanse of *pampa*, flat and open land, occupies most of the area of the *ayllu* Yanacóna and extends to the flat areas of fields surrounding Lakes Huaypo and Piuray (fig. 10). The *pampa* in Chinchero, at a constant altitude between 3750 and 3800 m, can be cultivated with modern technology, the lands plowed with oxen or even tractors, and the harvests collected by trucks with access to a paved road to Cusco. *Pampa* lands are cultivated entirely, so that their original vegetation is gone. They are now characterized by European agricultural weeds and the encouraged edible plant *Brassica campestris*, grasses (e.g., *Festuca sublimis*), and rushes (*Juncus* spp.). Water lying above or just below the ground of the old lake bed is extremely alkaline. People do not consider the *pampa* to be as fertile as the hillside lands of Cuper, and the pressures of cash cropping have caused the rotation system dictating four or more years of fallow to break down. Many farmers on the *pampa* now plant every year, count-

ing on artificial fertilizers to make up for the lack of fallow, but acknowledging that it does not.

A small *qhishwa*, or warm zone, lies between 3100 and 3600 m in the canyon to the east of town, below the spots where the waters spring out of the hillside at Puqpuq and Chaqchaq'illay. These waters irrigate Chinchero's few maize fields and then flow another kilometer into the Urubamba River. Although this is the only area of Chinchero where maize can be grown, that fact alone does not define the zone, since most of the *qhishwa* territory is too steep for cultivation of any kind. These isolated fields within the lands of the town of Urquillos were recently won in a lawsuit by the community of Cuper and are cultivated by different elected members of the community of Cuper each year. The large-kerneled white maize grown best in the Urubamba Valley is an extremely valuable export crop (Grobman et al., 1961). Residents of Chinchero without access to these fields reserve a portion of their potato harvest to make *ch'uñu* specifically to trade for maize grown in the Urubamba Valley.

The two-hour walk from Chinchero center to

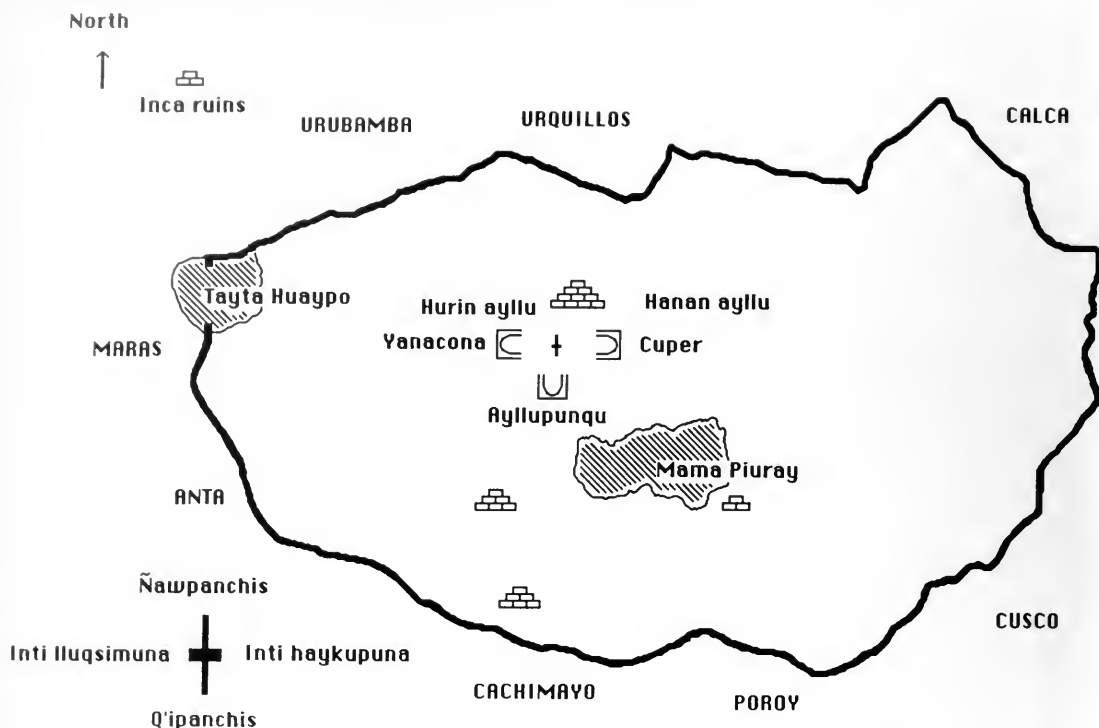


FIG. 9. Schematic map of Chinchero.

Urquillos, on the Urubamba River, goes through this *qhishwa* zone. Before the completion of a paved road to the town of Urubamba in 1983 made possible rapid access by vehicle, Urquillos was the closest point in the Urubamba Valley. A long history of close connection exists between the two communities; a 16th-century document noted that Urquillos included an "ayllu Chinchero" of 50 Indians (Villanueva U., 1982, p. 17). Hundreds of Chincheros attend the annual fiesta of Urquillos on March 8, especially important for the healing mud baths which take place in the church. Urquillos residents in turn bring produce by mule to trade or sell in the Chinchero Sunday market: condiments, flowers, lettuce, hot peppers, and what they are most appreciated for, huge baskets of *capulí* (*Prunus serotina* ssp. *capulí*), packed in the large leaves of *q'armatu* (*Nicotiana tomentosa*).

Leaving the plaza of Chinchero, people walk to the bottom of the Inca ruins along a narrow path (formerly an Inca trail), through the area called Simayuq (formerly the location of dense *sima* grass), past the rock outcrop Chinkana ('maze') and the stone in the brook called Qhillu machaqwayniyuq ('with a yellow snake'), to Wayraq

Punku ('Wind's Door'). There, as at many spots on Andean paths, one has the definite sensation of going around a corner. At such spots the Incas often built an actual doorway, like those outposts at Ollantaytambo and Machu Picchu. As the toponym suggests, the door is opened to the winds from the valley, which are warmer and more gentle and make a less harsh sound than the winds that blow across the plain.

Past Wayraq Punku the path drops off sharply, crossing the stream to turn another corner at Qinti Capilla ('Hummingbird Chapel'), where Chincheros pause to rest, chew coca, or make a small offering. From this spot the Urubamba Valley can be surveyed. Hummingbirds and raucous groups of small green parakeets (Sp., *loros*) fly; the plant growth becomes lusher and more fragrant. *Niwa* (*Cortaderia* sp.) grows well above head-height, and startlingly beautiful passion-flowers (*Passiflora pinnatistipula*, 'grenadillas') and other vines tangle with shrubs. This is the *qhishwa*.

Much of Chinchero is not *puna*, *pampa*, *qhishwa*, or *qucha* ('lake'). Large areas of sloped hillside, *khata* and steeper *urqu*, serve for potato cultivation and subsequent rotations of tubers, legumes,



FIG. 10. Mountain is reflected in a pond on the pampa of Yanacona (photo CCTC).

and grains and for herding. Like Puqpuq and Chaqchaq'illay, the water sources already mentioned, many features in this landscape are important landmarks. A number of kinds of features also designate kinds of plants, as do the zones *puna*, *pampa*, and *qhishwa*. Among these are seepage (Qu., *ch'aran*), running water (Qu., *mayu*), hill (Qu., *urqu*), fallow (Qu., *purun*), rock (Qu., *qaca*), lake or standing water (Qu., *qucha*), and the more general earth (Qu., *pacha*).

Because the locations in which plants grow are crucial keys to their identification, so landmarks also mark plant organisms in both name and conceptual identity. Quechua people know what plants "should" grow in a given place, what plants to expect to be there, because of their repeated familiarity with all of the places in their world. They relate plants not just to a kind of environment, but to a specific place (e.g., Titiqua Wayq'u, Inkaq Mallkin Pampa), based on their personal cognitive map of their own *ayllu*. (Because *ayllus* are land-based groups, the word refers both to the lands and to the social group associated with those lands.) When we talked with someone about any particular plant, referred to by name or as a dried

specimen, that person very often told us where it grew, e.g., above Puqpuq waterfall, or at Titiqua. She said, "I know where you got that," and was right.

Judgments of *ayllu*-specific geography affect plant knowledge. Frequently, a person from Cuper did not recognize a plant from Taucca, or a Cuper resident looking at a specimen of the plant *tiqllay warmi* (*Senecio erosus*) from the *puna* above Taucca commented that it grew on Antakillqa, a comparable environment within her own *ayllu*. People from Yanacona, which has no *puna*, often did not recognize *puna* plants at all, unless they had very large herds and pastured them in the common grazing lands on Antakillqa. (Ordinarily, people pasture animals in the fallow fields [Qu., *purun*] of their own community.)

Plant names are common in Chinchero toponyms, where the plants mark places in the landscape. Residents said that the plants named grew in those spots, statements we were able to confirm in some cases. People told us that Q'erapata, the name of a small annex to the north of Chinchero center, referred to a past environment. Formerly during fallow years, the hillsides were white with

the pale flowers of the weedy plant *q'ira* (*Astragalus garbancillo*). Now that a number of residences have been built, and fields of grains planted year after year as cash crops have replaced the centuries-old tradition of crop rotation by sectoral fallowing (Qu., *mañayes*), the *q'ira* meadow no longer blooms.

Methods

Our work in Chinchero in 1982 established a basic methodology for ethnobotanical fieldwork, which we continue to use. We followed the well-established botanical methodology for collecting herbarium specimens as outlined, among others, by the United States Department of Agriculture (1971), augmented by systematic collection of the related ethnographic information necessary to make that collection meaningful to us.

The original research team that collected the flora included both botanists with experience in plant collection techniques (W.D., S.K., C.S.) and anthropologists with a background of participant observation and informal interviews (C.F., E.F.). In general, while botanists and anthropologists initially had limited experience in fieldwork in the other disciplines, all had a demonstrated commitment to interdisciplinary study (King, 1982; Davis & Yost, 1983). The entire Chinchero project team together planned a group strategy for accomplishing a goal toward which all members of the group would then work. As the study progressed, the field team diminished in size, but still sought to fulfill the various original aims of the work.

We collected plants within the boundaries of the community of Chinchero (lat. 13°23'–25'S, long. 72°0'–5'W). Botanists organized a laboratory, and 19 able and energetic volunteers recruited by Earthwatch, Inc., assisted us in the various tasks of gathering, processing, and organizing the plant collection.

We were able to collect most plants during the height of the rainy season (January–March). The majority of plants in the survey came from the community of Cuper, which is the most environmentally diverse community of Chinchero, with lands ranging in altitude from 3100 to 4600 m, and also the community of which two of us (C.F., E.F.) are members.

Our collection procedure was designed to allow coordination of the activities of our diverse team and standardization of the data gathered by all members. We collected specimens with one to five

duplicates of each numbered “kind” of plant in separate plastic bags. In nearly all cases, these “kinds” were, in fact, plant species. In addition we made a photographic record of most plants. Temporary numbers given at the time of collection made possible the coordination of separate notes by anthropologists, botanists, and photographers; we assigned permanent numbers to plants in the laboratory before pressing. Botanists kept daily notebooks, using temporary numbers to refer to plant specimens, recording date, personnel, place, specimen number, family and genus if known, habitat, and description of characters of the plant likely not to be present in the herbarium specimen, such as size, color, and smell. We pressed plants in numbered folded sheets of newspaper, stacked alternately with sheets of felted blotting paper and cardboard corrugates, and tightly strapped between wooden press-ends. We laid presses on a wooden box containing an electric heating source to dry for a day or more, as needed. We stored dried specimens in cardboard boxes for use in interviews and ultimate distribution to herbaria in Peru and the United States. In accordance with requirements of the Ministry of Agriculture of Peru, we left duplicate collections of specimens with the Museo de Historia Natural “Javier Prado” (Universidad Nacional Mayor de San Marcos) in Lima and with the herbarium of the Universidad Nacional San Antonio Abad del Cusco. All other specimens were shipped to Field Museum of Natural History in Chicago for identification and further distribution under the direction of two of us (T.P., C.N.).

Porter (1959, p. 42) comments that “the ultimate goal of collecting in the field and preserving in the herbarium is very simple: ... to preserve for all time a series of specimens and notes that will yield the maximum of information about the plants concerned.” The accomplishment of this goal, however, is in no way simple. Which are the plants “concerned”? What are the various kinds of information, and from which sources are they to be taken? How extensive should notes be? For whom are we preserving the data?

Even the researcher with a clearly defined methodology for collecting plants and preserving them still faces questions on stepping outside the laboratory, beginning with: Who will go along? In this study, each daily collection group included an anthropologist, a botanist, a local plant user, and one or more Earthwatch volunteers who assisted in collecting duplicate specimens, photographing plants, and taking notes. Several Chinchero resi-



FIG. 11. Puqupuq waterfall is never visited by people who avoid *sirena* (Sp.), the malignant female spirit present there (photo S.K.).

dents worked as paid assistants to the project, and many others volunteered their help (see Acknowledgments). Both anthropologists (C.F., E.F.) spoke English, Spanish, and Quechua; botanists (W.D., S.K., C.S.) spoke English and Spanish; local people spoke Quechua and sometimes Spanish.

In Chinchero, the mandate to conduct a broad survey of the flora of an autodefined culture area

corresponding to a political province did not obviate the necessity of a daily decision: Which direction should be taken? We selected a direction and destination for each collection team toward the goal of surveying the widest possible range of environmental zones, human communities (*ayllus*), and human activities. We targeted, for example, places such as a "herding area at the sum-



FIG. 12. Mother and daughter peel potatoes in house courtyard. Note dooryard plantings of useful herbs, *chivanway*, *Stenomeson* spp. (ornamental), *ruda*, *Ruta graveolens* (ritual/medicinal), and *llanten* (*Plantago major*) (used for tea) (photo C.S.).

mit of the highest mountain,” “potato fields surrounding a large lake,” “waterfall avoided by humans” (fig. 11), or “weedy dooryards.”

Frequently, we took time to evaluate our progress toward this goal along the paths of plant collection. We recognized that botanists and anthropologists alike often tend to search for and value the exotic. For instance, in our enthusiasm we first explored the most difficult environments of Chinchero; for example, the top of the highest hill and an isolated waterfall. with the result that,

later in the study, we had to allot several days to collecting weeds from paths and dooryards in the center of town. These common and weedy plants were important in documenting the place of plants in Quechua life. Two ready examples are *markhu* (*Ambrosia arborescens*) and *muthuy* (*Senna versicolor*), both of which have a variety of uses (fig. 12). Some of the extremely common plants from Chinchero were difficult for botanists to identify, that is, *kiku* (*Bidens andicola*), *llawlli* (*Barnadesia* spp.), and *lumu lumu* (*Hypseocharis bilobata*),

which was said by botanists to be limited in geographic distribution to the Department of Cusco.

Our goal on each excursion was to collect every kind of plant not previously collected. Botanists generally made the judgment of what constituted a "kind" of plant, thinking of "kinds" as species. We collected and noted unnamed or "useless" plants as well as those said to be useful. We included sterile specimens of ethnographic interest, even though they might be difficult for botanists to identify. *Maransiras*, for example, is an edible wild plant which is said never to flower. The sterile specimens of plants in this Chinchero category may represent one or even two new species, although identification awaits the collection of flowers.

We collected again any plant which informants called to our attention as particularly useful or interesting, as well as plants given names we had not heard before. These repeated collections helped us link previously recorded information with the plant species ultimately determined. Quechua plant names show a high degree of variability, which takes several forms. First, people give the same name to different plants; for example, people call both *Hypoxis decumbens*, an amaryllid, and *Anthericum eccremorrhizum*, a lily, *kuchi kuchi* (Qu., 'pig pig'). Second, different people give different names to the same plant; for example, on encountering the shrub *Nicotiana tomentosa*, one person called it *q'armatu* while another called it *paya paya qhura*. Third, names change according to context; for example, adults call *Fuchsia apetala* by the name *chhilin campanilla* (Qu., *chhilin* is an onomatopoeia for the sound of a bell; Sp., *campanilla* 'little bell'), while shepherd children may call it *frutilla frutilla* (Qu. from Sp., 'strawberry strawberry'). Because of such variation, we had to regard information acquired without reference to a plant specimen as indefinite hearsay.

We tied our information to the potential sources of varying knowledge by collecting repeated voucher specimens and by noting the location and context of encounter and the identity of the informant. In practice we were occasionally willing to bend this rule because of the extraordinary memories of Quechua people for their natural environment. Frequently, when we brought home a plant, a passerby would correctly tell us the exact spot where we had collected it. Three years later field assistants remembered the plants we had collected, their locations, and even the weather and events of that day. For instance, if a person told us without prompting that we must be referring

to a plant that we had collected underneath an eagle-shaped rock just above the waterfall, and she was right, we were willing to treat her information as if we were looking at the plant together.

We segregated some fresh plant specimens for use in ethnographic interviews in the laboratory, so that each plant might be examined by a variety of local people including men and women, young and old. Although we also conducted interviews using dried specimens, people sometimes felt less comfortable identifying dried plants. Quechua people can identify a growing plant more readily than a dried specimen, which may have lost important clues of smell, color, or form, even though people are used to seeing dried plants that have been bought or collected and are kept for use as medicines or cures (Qu., *hampi*).

Ethnographers kept daily notebooks, using the same temporary numbers as botanists to refer to plant specimens. These field notebooks contained a record of date, personnel, place, and local names and uses. We took extensive notes on conversations with people about these plants, noting the identity of informants and a range of comments, which often included name, preferred habitat, variations, and utility. We also recorded negative responses. As noted above, local people participated in every plant-collecting excursion. In addition, we talked about the plants we found with people we encountered, then asked other community members to spend time in further interviews in the laboratory. We tried informally to get a cross section of points of view by sex, age, and residence. We formed an admitted bias for consultants who were culturally conservative, based on our experience that people who were more fully bilingual and acculturated to Cusco life simply did not know very much about plants, had limited interest in them, and were frequently unable to comment.

Ethnographers recorded localities in the form of specific toponyms. While these local place names do not appear on maps, anyone who goes to that area and asks for a place by name can be led directly to it, since Quechua people name every feature of their topography: fields, hills, passes, springs, and places with a view. We included longitude and latitude on plant labels for precision.

In a sense, each discipline (field botany and ethnography) taught a lesson in systematic collection and recording of data. Specific skills included collecting whole plants and identifying individual speakers, paying attention to plant habitats and to social contexts, and a great deal of useful descrip-

tive and functional terminology. While ethnography has no apparent standardized methodology, and no comforting details of size of paper and nature of equipment, our work is not unsystematic. We learned and practiced the delicate art of asking questions naive enough to avoid prompting answers, without betraying such ignorance as to encourage ridicule and hidden obscenity. All participants in our study learned that a plant could have many uses and even names, so that no individual was to be believed or disbelieved.

This study refers to some four years of fieldwork in Chinchero over a 10-year period. Such depth of ethnographic experience, and the power that experience holds to enlighten every context of encounter with plants, changes the endeavor of ethnobotany. The experiences, actions, and statements of known people provide the constant frame for discussion. As ethnobotanists working in an agricultural society, we had an advantage over many other scientists because people were as interested in plants as we were and were happy to discuss the subject at length. We can better appreciate the meaning of those words and actions because our ethnographic information is linked to plant specimens.

In any ethnographic study, the questions asked and the responses given are interdependent. The process of shaping questions is comparable to the use of a pre-questionnaire and subsequent questionnaire by some social scientists. Because anthropologists are particularly aware of the extent to which both sides influence one another, they are able to continue realizing and refining the questions at issue in their particular study. An example from our work in Chinchero illustrates this process. When we first began discussing with people the plants we found, we were particularly interested in eliciting their comments on the names and uses of those plants. As we talked, we found that people routinely volunteered the locations where a particular plant grew, information which at that time did not interest us. These strings of toponyms were downright unwelcome: We could not spell them, we did not know where they were, we could not write fast enough to catch them all, and they crowded more interesting information out of our notebooks. However, since we had begun this work with the ethnographic premise that the entire range of people's comments about a plant should be recorded, we struggled to write them down. We soon realized, of course, that Chinchero people were telling us that where plants grow is a critical element in their understanding

of them. In fact, the association of plants with places is the essential mnemonic tool which allows Chinchero people to maintain a complex and intricate body of environmental knowledge, and the logic of those associations is a major classifying device (C. Franquemont, 1987).

We recorded negative responses as well. Many times, when we asked someone the name of a plant, the answer was something we rendered as "name unknown." The actual response might have been, "I don't know," "I can't remember," or a shrug. Rarely did people tell us, "That plant has no name."; very rarely, "I've never seen that plant before in my life."; and on one occasion, "That's not a plant" (in reference to a powdery white lichen, *Diploschistes* sp.) We found that plants which are not of interest to people provide negative evidence of the concerns addressed by their system of classification (Franquemont, 1987). Of course, some instances may be evidence of the imperfection of any individual's memory, since no one can recall on demand everything they ever knew. Roughly one out of 12 responses fell into this "name unknown" category. Disproportionate numbers of these cases were cryptogams or aquatic plants, or plants not collected within that individual's *ayllu*, confirming a pattern of *ayllu*-specific knowledge (C. Franquemont, 1987).

As summarized earlier, the Chinchero plant collection contains 836 numbered plant specimens with several thousand duplicates, representing 502 plant species in 311 plant genera in 112 plant families and some 250 Quechua categories. Although this statement is accurate, it should not be taken as a quantitative profile of the complex and idiosyncratic realm of Chinchero plant life, but rather as an indication of the scale of information analyzed. Together with the ethnographic notes assembled at the time of collection and in a subsequent year of fieldwork, this large corpus of information was transferred into a computerized data base. The original file, containing information taken directly from field notebooks, was used to sort and create specialized files to which summary categories could be added. We (T.P., C.N.) prepared a book of machine copy reductions of Field Museum's mounted set of the plant specimens, which then served as a very useful guide to the collection, particularly during subsequent field trips.

The Chinchero ethnobotanical project differs from previous studies in the extensive nature of plant collection, the methods of plant collection with extensive supporting ethnographic documen-

tation, and the reference to that collection at later stages of analysis. The Chinchero collection differs from most ethnobotanical collections because we collected noneconomic, nonmedicinal, and unnamed plants as well as named useful ones; we made repeated collections; we collected any ethnographic information people were willing to give us rather than concentrating on a few specific questions. In addition, we not only attributed information to specific informants, but subsequently continued to consider the ethnobotany of Chinchero as comprised of highly individual knowledge. This broad approach led to the realization of the importance of place names, reminiscence, and nostalgia (Franquemont, 1987).

Cultivated Plants in Chinchero

The cultivated plant species collected in Chinchero include unique Andean cultigens that exhibit specialized adaptations to high-altitude environments. Only one of these cultigens, the potato, has achieved worldwide importance. These nutritious food crops, the result of artificial selection by Andean people, include the tubers *Solanum tuberosum* (Qu., *papa*), *Ullucus tuberosus* (Sp., *lisas*), *Oxalis tuberosa* (Qu., *oca*), and *Tropaeolum tuberosum* (Qu., *añu*); the pseudocereal *Chenopodium quinoa* (Qu., *quinua*); the root crops *Arracacia xanthorrhiza* (Qu., *rakhacha*) and *Canna × indica* (Qu., *achira*; edible part a rhizome); and the legume *Lupinus mutabilis* (Qu., *tarwi*). The nutritional value of these cultigens is receiving new attention (King & Gershoff, 1987), although indigenous Andean people have enjoyed them as part of their yearly diet for millennia.

Many of these crops contain secondary compounds (Johns & Towers, 1981) and must be detoxified before they are eaten. *Lupinus mutabilis* (Qu., *tarwi*) contains high levels of quinolizidine alkaloids (King, 1988) which are removed in the process of soaking, boiling, and further soaking used in Chinchero. Tubers and leaves of *Oxalis tuberosa* (Qu., *oca*) contain varying levels of calcium oxalate. Tubers are processed by being left in the sun for two or three days to a week, depending on individual taste, as they are said to get sweeter with each day of exposure. *Tropaeolum tuberosum* contains glucosinilates that release volatile mustard oils (isothiocyanates) when cooked (Johns & Towers, 1981). Chinchero people treat *Tropaeolum* tubers so that they will "taste good." Tubers must be left in the sun for two days if dug

up at harvest time (in June) or for two weeks if dug up earlier in the year.

Equally interesting are the processes for turning fresh vegetables into foodstuffs that are commonly stored for periods as long as 10 years and uncommonly for 20. These procedures provided the continual surplus of food which was the basis of the Inca Empire (Rowe, 1946). Potatoes go through stages of productive rotting: *tapura*, tubers which are rotten when dug up or soon after, are boiled and eaten in soup; *kachi ch'uñu*, squishy tubers which have been frozen but not dried, are boiled and eaten with salt and, if possible, cheese; and *ch'uñu*, shrunken, desiccated tubers which have been repeatedly frozen, stomped, and sun-bleached, are soaked, boiled, and eaten in soups and stews at any time from one to many years after they have been harvested. This preservation strategy is only possible in the extreme climate of the high Andes, although city residents sometimes duplicate the first stage by putting potatoes in their freezer overnight in imitation of *kachi ch'uñu*.

Alternatively, potatoes are leached in pools of water for a period of days and then dried to produce white, mealy tubers called *moraya* (Qu.), which also last for years. *Lisas* (*Ullucus tuberosus*) and *oca* (*Oxalis tuberosa*) are processed in the same way as *ch'uñu* for long-term storage, making *llinlli* (Qu.) and *khaya* (Qu.), respectively. Although these freeze-dried tubers—far smaller and lighter than fresh tubers—are stored in enormous baskets for later trade or use, they will not be consumed by insects, bacteria, or rats.

The community of Chinchero is known throughout the southern Peruvian Andes for growing potatoes both on a large scale and with particular expertise. The *pampa* of Chinchero may have been the site of specialized potato production as long ago as Inca times, so that the nearby Inca sites of Moray and Machu Picchu were constructed for the purposes of industrial processing and storage of tubers (E. Franquemont, 1983). More recently, Chinchero has been a source of new potato varieties for the southern Peruvian Andes. Most notably, Eugenio Aucapuma created the widely popular cultivar *Papa Olones* through artificial selection of tubers he produced by planting the seeds of selected potato fruits (Qu., *ambarqutu*).

Potatoes and, in lesser quantities, other tubers are eaten in a variety of ways. Most commonly, which is twice a day in most households in Chinchero, boiled potatoes are eaten in soups seasoned with condiments such as *muña* (*Minthostachys glabrescens*). Plates or cloths of boiled potatoes are



FIG. 13. An *ayni* group accomplishes first hoeing of potato field with attendant ritual (January) (photo W.D.).

offered as accompaniment to every meal. Families who can afford cooking oil also eat fried potatoes occasionally, but most people dislike the improved varieties of white potatoes because they are useful only for frying.

Although estimates of the number of varieties of potatoes known to Quechua people go as high as 1,000, Brush's statement that "the average farmer growing these varieties can name about thirty-five types" is consistent with our observations in Chinchero (Brush et al., 1981).

The traditional potato cultivars in Chinchero include examples of ecological adaptation, functional and technological specialization, and the application of the aesthetics of taste, texture, and color. Many Chincheros were unable to identify potato varieties from growing plants by such characters as flower color, leaf shape and wrinkling, or habit, but instead dug up a few tubers. For the same reason, botanists are unable to identify subspecific or cultivar categories on the basis of herbarium or specimens alone. Au.Q. was among the few people we encountered who was able to identify

varieties from plants in his own fields, where of course he knew what mix of seeds he had planted.

Potatoes are generally grown according to one of two regimes. A small number of fields that are irrigable (Qu., *maway*) may be planted as early as August for harvest in January–February. The foliage is still green at *maway* harvest and is used for fodder, and *Brassica campestris* is encouraged within the fields to be eaten as a green (figs. 13–14). The great bulk of Chinchero potatoes (Qu., *hatun tarpuy* 'great planting') are planted in non-irrigable fields at the outset of the rainy season in October–November and are harvested in May–June when the foliage has died and the ground is dry (fig. 15). These potatoes are hoed and hilled twice, once with attendant ritual (fig. 16).

Chiri papas are specialized for cultivation in cold areas and are grown in Chinchero only in the high *puna* areas of Taucsa and Umasbamba. Plants are quite short in stature and withstand frosts; tubers are small and not very tasty, so that Chincheros reserve them for *ch'uñu*. Two other potato cultivars are grown exclusively for *ch'uñu*: *yana*



FIG. 14. Harvest of *maway* (irrigated) fields is done by first cutting the still-green tops of the potato plants with a sickle; then pulling up stalks and removing attached tubers. Quantities of *Brassica campestris*, eaten as greens, are allowed to grow in potato fields (photo CCTC).

wanya, also called *asul wanya* (Qu., *yana* 'black'; Sp., *asul* 'blue'), and *cuchillo p'aki* ('knife-breaker'; from Sp., *cuchillo* 'knife' and Qu., *p'aki* 'to break'), which has large reddish tubers which are said to be so hard that they break knives.

Since virtually all of the land in Chinchero is too high in elevation to grow maize (*Zea mays*), Chinchero people reserve a part of their potato harvest in the form of tubers or *ch'uñu* (Qu.) to trade for maize with their neighbors in the Urubamba Valley, where maize is the primary agricultural product.

When asked directly to name the source of a potato cultivar, farmers' answers formed two poles: potatoes were said to be either "from long ago" (Sp., *antiguo*) and frequently "from the family," or else from the Ministry of Agriculture. In longer conversations, farmers recognized many paths from the national government into their fields, including *hacienda* labor paid in potatoes and the Cusco market as well as direct distribution of seed tubers by government agencies, but they continued to mark cultivars as either "ours" or "theirs."

Mariba, *yana mariba*, *yana bole*, *renacimiento*, *mi Perú*, *tomasa condemayta*, and *cusqueña* were identified as Ministry of Agriculture potatoes. Of these, only *papa cusqueña* was said to be worth eating, and it was said to be quite good and to withstand boiling as well as frying. Chinchero farmers grow other "improved" varieties for sale; they require the use of fertilizer and insecticide and are profitable only for a few farmers with large areas of flat *pampa* land.

In 1986 growing potatoes was not profitable for anyone due to the low price set by the government, a price which nonetheless was higher than that of potatoes abroad. This fact coupled with the lack of an infrastructure for national distribution of agricultural produce resulted in government import from abroad of large quantities of potatoes for sale in cities.

The ideal of the potato in Chinchero is *qumpis*, with tubers which are evenly round, clear in color, and mealy in texture. These potatoes are the best to eat, are the most attractive, and go for the highest price if sold. They can be used for any purpose,



FIG. 15. Tops of plants from *maway* (irrigated field) are useful as fodder (photo CCTC).

although they are not ordinarily made into *ch'uñu* because they have a high value, and other varieties are specialized for that purpose. The most highly valued quality in a cooked potato is a mealy texture called in the literature *arenoso* (Sp., 'sandy') or *harinoso* (Sp., 'floury'). Both adjectives are correct translations of the Quechua phrase, *aquyuq*, used to describe them. Although potato varieties are said to be specialized for several methods of preparation, including baking in an earth-clod oven (*wathiya*) and frying, the most highly regarded potatoes are those that can be boiled (Qu., *wayq'u*).

Several specimens of feral, unused *Solanum tuberosum*, collected along trails at 3800 m., are known as *atuq papa* (Qu., 'fox's potatoes'), as is one specimen of *Solanum acaule*. All indigenous cultigens are acknowledged by Chinchero people to have wild counterparts, but most cultigens of Old World origin such as fava beans and barley are not. Wild potato varieties are classed variously as *k'ita*, *atuq*, and *intiq* or *killaq*. These names characterize plants in a sequence of social domains along a continuum from civilized to uncivilized. The first, *k'ita*, are feral, or tame-gone-wild. Potatoes which are said to be *atuq*, or to belong to

the fox, are thought to be wild, asocial, and uncivilized, to be quite useless. *Intiq* or *killaq papas* are not *Solanum* species, but rather *Peperomia* species having tiny perfectly round tubers, and so they can be said to be potatoes in the domain of the sun or moon, a parallel but entirely distinct social realm, that of supernatural society.

There have been reports that indigenous peoples eat wild tubers (e.g., Correll, 1962, for Mexico and the North American Southwest); people in Chinchero acknowledge the possibility of eating wild tubers, but view it as an uncivilized thing to do. They frequently maintain that, although "others" who live in poorer or more marginal areas of Chinchero eat such foods as wild *Solanum* tubers, they themselves do not. For example, Cuper residents suggested that people living in the former *hacienda* Araqay at the eastern edge of Chinchero ate *araq* potatoes, giving *k'ita* as a synonym for *araq*; however, people commonly eat the greens of a number of plants primarily cultivated for tubers or grains, including potatoes, *lisas*, *quinua*, and *rhakhacha*.

Two cultigens not ordinarily grown at high altitude, *Canna* × *indica* and *Arracacia xanthor-*



FIG. 16. A woman adds to a pile of potatoes being harvested by a group of people working in *minkha*. Portions of the day's harvest will be distributed among the workers of the day (photo CCTC).

rhiza, were cultivated experimentally in Chinchero. L.P. planted *achira* and *rakhacha* in his relatively low and warm maize field at 3100 m as an experiment to determine whether he could grow them in Chinchero. His interest in planting a wide range of cultigens was challenged by these lowland crops. Ultimately, he decided that, while not impossible, it was not worth the effort, particularly since neither food is considered particularly desirable. *Achira* (Gade, 1966) is not normally eaten in Chinchero, although people are familiar with the vegetable, which is served throughout the streets of Cusco during the fiesta of Corpus Christi in May on plates of *ch'iri uchu* (Qu., 'cold' 'hot pepper'). Many agriculturalists like L.P. engage in constant experimentation, bringing wild plants home to their courtyards and planting odd seeds given to them. In 1986 several farmers experimented by planting seeds of *Amaranthus caudatus* (Qu., *kiwicha*), a plant actively promoted by the García government. The farmers found that *kiwicha* did not grow well in altitudes as high as those of Chinchero, and they had limited interest in the grain since no one knew how to prepare it. The farmers denied hear-

ing of the plant before the recent publicity, although in the early 1970s (Plowman, pers. comm.; Gade, 1975), it was reported to have grown in Ollantaytambo about 40 km from Chinchero.

In spite of the highly specialized and successful nature of Chinchero agriculture, we found that people also consumed a wide variety of wild plants. Such plants have frequently been characterized in botanical reports as "famine food," but we learned in Chinchero that preferences led people to include wild plants as a significant element of their daily diet, even when they had abundant food resources from cultivation (table 1). People know exactly where these plants can be found; they are occasionally protected or even transplanted nearer to households. The use of these plants should be regarded as ongoing experimentation and potential domestication activity, and so we include these wild plants in our discussion of "cultivated plants."

Use of wild plants for diet is summarized in Table 1: raw vegetables (5 species), masticants (3 species), cooked greens or roots (11 species), condiments (10 species), fruits (3 species), and snack foods (25 species). In addition, more than 40 species

TABLE 1. Wild plants used in Chinchero diet.

Local name	Latin name	Use
UNCOOKED VEGETABLES		
k'ita achuqcha	<i>Cyclanthera brachybotrys</i>	Fresh fruits in salads
llakhi or k'ita aselgas	<i>Rumex crispus</i>	Young tender leaves in salads
maransiras	Compositae indet.	Fresh leaves in sauce
murmuntu or llullucha	<i>Nostoc commune</i>	Fresh algae, has tonic qualities
uqururu	<i>Mimulus glabratus</i>	Fresh leaves in salads
YOUNG LEAVES AS COOKED GREENS		
phuytu or k'ita quinoa	<i>Chenopodium quinoa</i> ssp. <i>millea</i> num	...
llullu	<i>Brassica campestris</i>	...
mayu mostazilla	<i>Nasturtium officinale</i>	...
lakhi or k'ita aselgas	<i>Rumex crispus</i>	...
k'ita or puna rakhacha	<i>Arracacia peruviana</i>	(Young leaves and stems)
COOKED VEGETABLES		
phuya phuya	<i>Nothoscordum andicola</i>	Roots boiled and chopped like onions
frutilla	<i>Hydrocotyle urbaniana</i>	Root boiled and its 'fruit' eaten
oka qupisun	<i>Calandrinia acaulis</i>	Root peeled, sunned, cooked
khallampa	<i>Morchella</i> spp.	Fungi replaces meat in main dishes
quncha	<i>Pleurocollybia</i> spp.	Fungi in hot sauces of main dishes
llullucha	<i>Nostoc commune</i>	Algae cooked in stews
CONDIMENTS		
khuñaqa	<i>Satureja boliviana</i>	Foliage in sopa de ch'uñu
chiquchipa	<i>Tagetes multiflora</i>	
payqu	<i>Gomphrena elegans</i> , <i>Iresine celosia</i> , <i>Chenopodium ambrosioides</i>	...
molle	<i>Schinus molle</i>	...
maransiras	Compositae indet.	...
mostaza	<i>Brassica</i> sp.	Seeds
muña	<i>Minthostachys glabrescens</i>	Leaves
puna colander	<i>Daucus montanus</i>	Leaves in hot sauce
puna colander	<i>Oreomyrrhis andicola</i>	Leaves can substitute for cilantro in hot sauce, other foods
qhitu qhitu	<i>Gamochaeta spicata</i>	Ground with flour of <i>Vicia fava</i>
SNACK FOODS*		
ramos ramos	<i>Bomarea</i> spp.	Stem and fruits
achanqharas	<i>Begonia clarkei</i>	Juice and epidermis of leaves
tintin	<i>Passiflora mixta</i>	Fruit
capulí	<i>Prunus serotina</i> ssp. <i>capuli</i>	Fruits
chiquchi	<i>Berberis cliffortioides</i>	Fruits
wayq'untuy	<i>Tillandsia oroyensis</i>	Accumulated water
k'aqla	Cactaceae sp.	Fruit
aña panqu	Cactaceae sp.	Fruit
pampa anis	<i>Vilobbia praetermissa</i>	Foliage
leche leche	<i>Ipomoea minima</i>	Tuber
luraypu	<i>Echeveria</i> cf. <i>peruviana</i>	Leaves chewed to alleviate thirst
ch'uulkus	<i>Oxalis peduncularis</i> var. <i>pilosa</i>	Stem and leaves chewed
chhilin campanilla	<i>Fuchsia apetala</i>	Fruits
frutilla frutilla		
k'ita frutilla	<i>Fragaria vesca</i>	Fruits
granadillas	<i>Passiflora pinnatistipula</i>	Fruits
kiyawcha	<i>Epidendrum</i> cf. <i>densifolium</i>	Juice of stem
	<i>Oncidium</i> cf. <i>aureum</i>	Pseudobulbs for thirst
trago trago	<i>Oxalis peduncularis</i>	Juice from stem and leaves
	<i>Oxalis steinbachii</i>	Stem and leaves, juice from flower
	<i>Oxalis</i> sp.	Root
	<i>Castilleja pumila</i>	Nectar from flowers
tintincha	<i>Passiflora gracilis</i>	Fruit, called k'ita trombos
macha macha	<i>Kakeneckia lanceolata</i>	Berries; also intoxicating
anis	<i>Ribes brachybotrys</i>	Chew plant

TABLE 1. *Continued.*

Local name	Latin name	Use
SNACK FOODS (CONTINUED)		
macha macha	<i>Ribes brachybotrys</i>	Eat berries
awilmantu	<i>Saracha herrerae</i>	Fruit, called puka ruru
piris piris	<i>Salpichroa gayi</i>	Fruit
aquy kaqka	<i>Pilea serpyllacea</i>	Raw fruit
LEAVES CHEWED "LIKE COCA"		
pampa anis	<i>Vilobia praetermissa</i>	Leaves
pawituscha	<i>Vicia andicola</i>	Leaves and stem
inca coca	<i>Polypodium</i> spp.	Leaves

* Eaten raw by shepherds (especially children) and others who frequent the areas where these plants grow.

of wild plants are gathered and systematically used raw in tonic drinks or prepared into teas, ingested both to maintain daily health and to treat special problems. Neither Quechua people nor nutritionists accept a clear-cut division between the two supposed functional categories, medicinal and nutritious. Of course, some cases are clear: *ñiñu-punqa* (*Euphorbia peplus*) is a violent purge and would never be consumed under normal circumstances. Many teas and drinks, however, are chosen for their general healthful attributes; for example, as tonics; as particularly appropriate to morning or evening consumption; or as agents of hot or cold needed to balance an individual's constitution.

A useful tree which is encouraged to grow near households is *qiswar* (Qu.), *Buddleja* spp. This formerly common native tree is appreciated for its wood, its colorful orange flowers, and the protection it offers from sun and wind. The chroniclers of the Colonial period say that the Cusco area was continuously forested at the time of the Spanish Conquest with native species such as *Buddleja* and *Polylepis* (Qu., *qiuña*). Today, these native trees exist only in a few sheltered remnants of cloud forest and as individual trees where protected by people. Cutting for use of the wood as fuel as well as climatic change have hastened the demise of these plants; and conversely, large-scale deforestation has contributed to the increasing dryness of sierra lands.

Informal experimentation is carried out constantly by people who pick up plants in the wild and bring them home to grow next to their houses. This activity is best represented in the Chinchero collections by the plants from the late A.H.'s house garden (*K100-K113*) (fig. 17). Along with condiments and ornamentals cultivated for use and sale, such as *wakatay* (*Tagetes terniflora*), *ruda* (*Ruta*

graveolens), and *chiwanway* (*Stenomeson variegatum*), Don A. had transplanted from Antakillqa hillside several wild plants—*negro uman* (*Eryngium weberbaueri*), *qalaywala* (*Polypodium angustifolia*), and *urqu phalcha* (*Halenia weddelliana*)—and was nurturing them as potential courtyard plants. On the wall of his courtyard, L.P. was still tending vines of *Boussingaultia diffusa* that he said had been transplanted there by his grandfather. The thick, juicy leaves of this plant are useful to L.P., who grinds them to make a poultice which is applied to the cheek for tooth problems. L.P.'s son, G.P., is now growing *maransiras* (unidentified species), a wild herb used as a condiment, next to his house in response to our interest in the plant and repeated questioning of his assertion that it never flowers. (It did not flower between 6 Sept. 1986 and 26 July 1987; when we visited G.P. in July 1988, he told us that one of his plants had indeed produced a white, "pilli-like" flower several months earlier.) These anecdotes are examples of the activity of all Chinchero people who travel on a daily and yearly basis throughout their varied ecology.

Gade (1972a) has suggested that Andean people's use of the common European field weed *Brassica campestris* as an edible green is an example of incipient agricultural practice, active encouragement of the growth of a camp-following weed that could eventually become a cultigen.

Over the past 450 years, a number of Old World crops have been integrated into Andean agriculture to varying degrees (table 2). None of them is a tuber; the major European changes in tuber farming in the Andes have been plowing with oxen and a feudal land tenure system, changes that have been felt more in Chinchero in the flat *ayllu* Yanacóna than on the slopes of Cuper. European grains are grown as much for cash crops as for con-



FIG. 17. A.H. and his wife pose in front of his household garden of herbs and ornamentals raised for use, sale, and curiosity (K101-K111) (photo S.K.).

sumption, and they are broadcast, cut, stooked, and threshed and winnowed in European style. It is interesting that *quinoa*, an Andean pseudocereal, is treated in much the same way (although threshed by hand in small quantities rather than with oxen).

Fava beans figure in the daily diet of all people in Chinchero. The fava bean (Sp., *habas*, *Vicia faba* L.) is an introduced crop plant in the Andes,

probably native to Southwest Asia. The bean is a staple food widely planted and eaten in Chinchero and sometimes sold. The beans are boiled and eaten fresh, or dried, then toasted (Sp., *tostado*) or boiled to make *phuspa* (Qu.), favored portable foods. *Habas* are planted after the first heavy rain in November, harvested in May. Five cultivars were collected in Chinchero under cultivation on the plain surrounding Lake Piuray at 3800 m. Three

TABLE 2. Chinchero cultigens.

Local name	English name	Latin name	Part used	Special preparation	Origin
ANDEAN CROPS					
papa (Qu.)	...	<i>Solanum tuberosum</i>	Tuber	Fresh, stored, frozen, freeze-dried, or water-processed	...
lisas (Sp.)	...	<i>Ullucus tuberosus</i>	Tuber
añu (Qu.)	...	<i>Tropaeolum tuberosum</i>	Tuber	Sunned	...
quinoa (Qu.)	...	<i>Chenopodium quinoa</i>	Grain	Washed	...
rakhacha (Qu.)	...	<i>Arracacia xanthorrhiza</i>	Root
achira (Qu.)	...	<i>Canna × indica</i>
tarwi (Qu.)	...	<i>Lupinus mutabilis</i>	Seeds	Boiled, leached	...
INTRODUCED CROPS					
avena (Sp.)	Oats	<i>Avena sativa</i>	Grain	...	Old World
cebada (Sp.)	Barley	<i>Hordeum vulgare</i>	Grain	...	Old World
trigo (Sp.)	Wheat	<i>Triticum aestivum</i>	Grain	...	Old World
albergas, Sp. arvejas	Peas	<i>Pisum sativum</i>	Seeds	...	Old World
hawas, Sp. habas	Fava beans	<i>Vicia faba</i>	Seeds	...	Old World
Qu., llullu; Sp., nabos	Rape	<i>Brassica campestris</i>	Greens	...	Old World
sara (Qu.)	Maize	<i>Zea mays</i>	Grain	...	Mexico
eucalyptus (Sp.)	Eucalyptus	<i>Eucalyptus globulus</i>	Wood, leaves	...	Australia

Individuals also occasionally cultivate radishes, carrots, lettuce, and onions on a very small scale.

were designated by color: *habas blancas* (Sp., *blanca* 'white,' in reference to its light-colored stems and fruits); *puka habas* (Qu., *puka* 'red,' in reference to its dark reddish stems and fruits); and *q'umir habas* (Qu., *q'umir* 'green,' again in reference to the green color of stems and fruits). Flowers of all three cultivars were white. A fourth cultivar, *puquchun habas* (Qu., *puquchun* 'ripen!'), was said to produce a greater quantity of large seeds. The fifth, *paluqu habas* (Qu.) had plants shorter in stature than most other varieties, but were not otherwise remarked by farmers.

The Old World pea, *Pisum sativum* (Qu., *alwirha*, from Sp., *arveja*), an introduced crop plant native to Europe or the Near East, is cultivated in small quantities in Chinchero for occasional consumption in soups and stews. Two varieties of *albergas* (from the Sp., *arvejas*), like those of *habas*, were collected, *blancas* (Sp., 'white') and *rojas* (Sp., 'red'), cultivated in small plots among fields of *habas* on the flat plain surrounding Lake Piuray at 3800 m. *Albergas blancas*, which had white flowers, were said to have larger seeds and to be more prolific than *albergas rojas*, which had red flowers. Although the variety *albergas blancas* was said to be newer, the seed for both came from locally kept family seed stocks.

Chinchero farmers increasingly plant the introduced grains: oats (*Avena sativa*) for animal fodder, wheat (*Triticum aestivum*) for occasional human consumption in thick soup (Qu., *lawá*) (fig. 18), and especially barley (*Hordeum vulgare*) for sale to the Cerveza Cusqueña brewery in Cusco.

Four species collected were cultivated for their fruit: *trombos* (fruits of *Passiflora mixta*), *manzana* 'apple' (*Malus sylvestris*, Eurasian origin), *durazno* 'peach' (*Prunus persica*, Chinese origin), and *capulí*, (*Prunus serotina* ssp. *capuli*, native of Mexico and Central America, cultivated and escaped). Although enterprising individuals (frequently children) collect these fruits in season and take them to markets for sale, they do not have any significant economic importance. Adults rarely eat them, generally viewing them as unhealthy, even life-threatening, foods.

Most of the many plants cultivated as condiments or teas are of Old World origin (table 3). These species are cultivated in small household gardens for personal use, gifts to neighbors, and sale in the Sunday market. The fact that so many of the species are European suggests that these gardens follow the model of the European herb garden.

The agricultural resources of this and other An-



FIG. 18. A *ch'asti*, an adolescent role in dance groups and fiestas, cleans wheat. Wheat, an Old World grain less suited to high altitudes, is increasingly replacing Andean grains such as *quinua* as a prestige food (photo S.K.).

dean communities have evolved over 5,000 years of experimentation, acquisition, and keen observation. Through this process, new cultivars (defined genetically and perceptually) have been developed, acquired, and maintained by the people of Chinchero according to their perceived needs and interests. In the course of this process, many plants have changed; genetic material has been

added and lost. Recent dependence upon cash economies and improved varieties developed by national sources have no doubt eroded the genetic pool available to Chinchero farmers. Despite this erosion, farmers will continue to bring their intelligence and creativity to solve their immediate problems through manipulation of the plant world in which they live.

TABLE 3. Minor cultivated plants.

Local name	Latin name	Use	Origin
CONDIMENTS OR TEAS			
manzanilla	<i>Matricaria recutita</i>	Flowers used to make tea	Eurasia
wakatay	<i>Tagetes terniflora</i>	Leaves used as condiment in soups and other dishes, to stuff cui (Qu., 'guinea pigs') before roasting	Andes
santa mayra	<i>Tanacetum parthenium</i>	Used for tea	Balkan Peninsula
ahinhus	<i>Artemisia absinthium</i>	Used for tea	Eurasia
culandro	<i>Coriandrum sativum</i>	Foliage used as ubiquitous condiment in cooked and uncooked dishes	Mediterranean
hinojo	<i>Foeniculum vulgare</i>	Herbage used for tea	Mediterranean
llantén	<i>Plantago major</i>	Leaves used for medicinal tea	Old World
phanti	<i>Cosmos peucedanifolius</i>	Entire plant as medicinal tea	Andes
ORNAMENTALS			
chiwanway	<i>Stenomeson</i> spp.	...	Andes
qantu	<i>Cantua buxifolia</i>	...	Andes
sira ñuqchu	<i>Salvia dombeyi</i>	...	Andes
tintin	<i>Passiflora mixta</i>	...	Andes
cartucho	<i>Penstemon gentianoides</i>	...	Mexico
puka t'ika	<i>Dahlia pinnata</i>	...	Mexico
clavel	<i>Dianthus barbatus</i>	...	Old World
uchu k'aspa	<i>Calendula officinalis</i>	...	Old World

Explanation of Format

Species Information

The following list of plants is arranged alphabetically by family, and within families, by genus and species. We have modified the format presented by Vickers and Plowman (1984) to include more extensive ethnographic information. We hope that this format will serve as a model for consistent ethnobotanical reporting, and that it presents a maximum amount of information of interest to botanists and anthropologists in an abbreviated (and space-saving) manner.

For each species the following information is given: family, genus and species, geographic distribution, community, altitude and habitat of collection, local name(s), voucher specimen numbers, and ethnographic information, in the following format:

FAMILY

Genus species author(s)

Known geographic distribution of the species.

Community, altitude. (Specific locality and habitat (specimen number if variable).

local name (language, 'gloss') [specimen number]

local name (language, 'gloss') [specimen number]

Ethnographic information (informant's initials). Further ethnographic information (informant's initials).

Community (if different), altitude, etc.

The format for the major cultivated plants includes more extensive discussion by the authors.

FAMILY, GENUS, SPECIES—Plants which could not be identified to species are listed at the end of their genus; those which could not be identified to genus are listed at the end of their family.

KNOWN GEOGRAPHIC DISTRIBUTION OF THE SPECIES—The geographic distribution was gleaned from published works (e.g., *Flora of Peru*, monographs), through consultation with taxonomic specialists and by checking specimens in Field Museum herbarium.

COMMUNITY—The structure of Chinchero communities (Sp., *comunidad*) or *ayllu* is described under "Setting" and their locations given in Figure 1. Since communities have ethnic identity and community-specific activities, economies, and even plant names, the community of collection is noted. The majority of collections was made in Cuper, the most environmentally diverse community.

ALTITUDE—Altitudinal ranges refer specifically

to localities of collection, not to communities or habitat types.

HABITAT—Habitats are quoted from botanists' collection notes. Specimen numbers follow descriptions only if habitats differ. Habitat descriptions generally express both the nature of human activity in a zone (i.e., "pastured," "garden") and its physical nature (i.e., "cliff faces," "waterfall"). Specific toponyms included in habitat descriptions will allow future researchers who talk to local people to locate these habitats directly within the 135-sq km area of Chinchero. Chinchero residents have a minutely named community topography and an experience-based phytogeography linking plants to specific places in their environment.

LOCAL NAME—We did not edit information on local names of plants to determine the "correct" or "best" name for a plant, but instead listed all responses. Frequently, more than one local name is listed for a species; sometimes more than one name is given for a single specimen number. If the informant was uncertain, we noted that the name was "suggested" as a possibility, or offered as an "alternate" to a preferred name. Even a single individual may accept more than one legitimate name for a plant (as in the case of *Astragalus garbancillo*). Spelling variation reflects varying pronunciation as we heard and recorded it. All Quechua words are spelled in a consistent orthography (see Note on Quechua Orthography).

LANGUAGE—Local names are identified as either Quechua (Qu.) or Spanish (Sp.). Quechua names derived from Spanish words are identified as Qu. from Sp., giving the Spanish word of origin.

GLOSS OF NAME—Translations for Quechua plant names are provided only if informants specifically told us that such a translation might be applied to that name; dictionary or hearsay translations are not included. Reference for spelling and meaning of all Spanish words is the *Diccionario de la Lengua Española* (Real Academia Española, 1984).

SPECIMEN NUMBER—The majority of specimens was collected between January and April, 1982 [D1339–D1822, K100–K321]. "D" numbers were collected by W.D., C.F., E.F., S.R.K., and C.R.S.; arbitrarily, names were listed alphabetically. After W.D. left the project, S.R.K. was listed first, represented by "K" numbers. Additional specimens were collected by E.F. in 1983 [F201–F202] and by C.F. and E.F. in 1985–1986 [F254–F258, F260–F282, F285–F366, F368–F371, and F376].

ETHNOGRAPHIC INFORMATION—We did not make judgments of cultural value in reporting eth-

nographic statements about plants. All information is reported, since childhood memories and aesthetic exclamations are equally as important as economic uses in Quechua people's understanding of the natural world. In order to express the variable nature of Quechua plant knowledge, we observed a number of conventions.

All observations have been translated into English, but words allowing only approximate translation such as illness terms are followed by original Spanish or Quechua words. Because Quechua categories of illness and cure do not correspond to pharmacological vocabulary (i.e., febrifuge, amenorrheic), we avoided the use of pharmacological terms.

Ethnographic information is reported in the voice of informants (whose initials are included at the end of the sentence) rather than as statements by the researchers about what informants said. For example, "Edible, and as good to eat as meat" (L.P.) is in place of "Said to be edible and as good to eat as meat." Although the voice is maintained, the translations are anything but direct; for instance, the exchange with L.P. probably went something like, "This stuff's good, you can eat it, I eat it; in fact if I don't have meat I eat it, it's like meat." "Meat?" "Meat." "Meat?" "Tastes just like meat." (Anonymous statements, unattributed to individuals, are by the authors. We speak as one, although in a future study, we would choose to present the diverse members of the research team as individuals as well.)

In the same way, we do not judge whether plants "treated" or successfully "cured" illnesses, but rather report what we were told. The ideas of "treatment" and "cure" are not separate to Quechua people; for example, the single word *hampi* might be said to mean 'treat for the purpose of curing.'

The following conventions rule the expression of negative knowledge:

Name [Use] Unknown—Informants said that they did not know the name or use of a plant; such a name or use may exist, but they did not know it or could not recall it.

Plant Has No Use—Informants stated definitely that a plant had no use. A name was thought to exist for every plant, although one lichen had no name because it was considered to be soil, not a plant.

Name [Use] Not Recorded—Ethnographic information was not recorded. A number of these plants grew in places which people fear and refuse to visit or talk about; for instance, Puqupuq water-

fall, locally known to be inhabited by a *sirena* (Sp., 'malignant female spirit').

Informant Biographies

Biographies are given of individuals interviewed in specific reference to plant specimens. Language skills vary greatly, but informants are judged as bilingual (bl.; Quechua and Spanish) or monolingual (ml.; Quechua only) on the basis of ability and frequency of communication in those languages. Approximate ages (as of 1982) are rounded off to the nearest decade up to 60; ages over 60 are impossible to estimate. Many changes took place in the lives of these individuals since the study began in 1982: Several married, several died, at least one migrated to Lima, and one became a trilingual university graduate.

1. G.A., Guadalupe Alvarez, married female, Yanacona, age 50, bl.
2. A.Ca., Adela Callañaupa Alvarez, unmarried female, Yanacona, age 10, bl., student
3. A.Co., (the late) Angelica Concha, unmarried female, Ayllupunqu, age 10, bl., student
4. N.C., Ñilda Callañaupa Alvarez, unmarried female, Yanacona, age 20, bl., university student
5. V.C., Vicente Callañaupa, married male, Yanacona, age 50, bl.
6. E.C., Eugenia Cusihuaman, married female, Cuper, age 60, ml.
7. Je.C., Jeronimo Cusihuaman Quispe, unmarried/married male, Cuper, age 20, bl., university student
8. Jo.C., Jose Cusihuaman, married male, Pukamarka, age 30, bl.
9. M.C., Melchior Cusihuaman, married male, Cuper, age 60, ml.
10. B.G., (the late) Benita Gutierrez Garcia, married female, Cuper, age 60, ml., weaver
11. A.H., (the late) Anisetto Huaman, married male, Cuper, age 60, ml.
12. J.H., Jacinto Huaman, married male, Ayllupunqu, age 40, bl.
13. L.H., Lorenzo Huaman, married male, Taucsa, age 30, bl.
14. M.H., Maria Huaman, married female, Taucsa, age 30, ml.
15. O.H., Octavio Huaman, unmarried male, Taucsa, age 10, bl.

16. T.H., Tomás Huaman Quispe, married male, Ayllupunqu, age 50, bl. archaeological employee
17. S.J., Simeona Jaimes Livita, married female, Ayllupunqu, age 20, bl.
18. M.L., Maria Livita, widowed female, Ayllupunqu, age 50, ml.
19. T.L., Teodora Livita, unmarried female, Ayllupunqu, age 50, ml.
20. G.P., Graciano Pumaaylli, unmarried/married male, Cuper, age 20, bl.
21. L.P., Lorenzo Pumaaylli, married male, Cuper, age 50, bl.
22. P.P., Pedro Pablo Pumayalli, married male, Cuper, age 50, bl., community leader
23. Au.Q., Aurelio Quillahuaman Livita, unmarried male, Ayllupunqu, age 20, bl.
24. Al.Q., Alejandro Quispe, married male, Yanacona, age 40, bl., blacksmith
25. Am.Q., unmarried male, Cuper, age 20, bl.
26. C.Q., Cipriana Quispe, married female, Cuper, age 60, ml., weaver
27. B.Q., (the late) Benita Quispe, widowed female, Yanacona, age 60, ml.
28. C.R., Cleofé Rodríguez, married female, Ayllupunqu, age 30, bl.
29. G.S., Genovevo Sallo Gutierrez, married male, Cuper, age 20, bl.
30. J.S., (the late) Julian Sallo, married male, Cuper, age 60, ml.
31. M.T., Martina ?, married female, Taucsa, age 20, ml.
32. U.I., (unidentified informant) refers to the group of casual informants spoken with incidentally throughout the study.

At least 19 of these individuals are now related to at least one of the authors through *compadrazgo*; six of these relationships already existed at the beginning of this study in 1982. To our knowledge, five have died.

Although efforts made to work with a balanced group of informants were purely informal, they do represent a range of social roles and backgrounds. Fourteen are female; 17 are male. Estimated ages range from nine to more than 60, including all groups between. Twenty are bilingual Spanish/Quechua speakers; 11 are monolingual Quechua speakers, meaning that they communicate exclusively in Quechua, although of course everyone understands at least some words of Spanish. The largest number of informants is from Cuper (12), followed by Ayllupunqu (8), Yanacona (6), Taucsa (4), and Pukamarka (1).

Note on Quechua (Qichuwa) Orthography

Quechua (*runa simi*) words in this work are spelled according to the official alphabet decreed by the government of Peru on 18 November 1985 as published in *El Peruano*, Lima, Tuesday, 24 December 1985.

- a (as in English hall)
- ch - chh - ch' (as in English chum, with variations)
- h (as in English hall)
- i (as ee in English tree; see note below)
- k - kh - k' (as k in English kiss, with variations)
- l (as in English land)
- ll (as li in English Dahlia)
- m (as in English, mum)
- n (as in English, nun)
- ñ (as in Spanish, caña)
- p - ph - p' (as in English, pot, plus variations)
- q - qh - q' (sound not present in English)
- r (variable)
- s (as in English, soup)
- t - th - t' (as in English top, plus variations)
- u (as in Spanish tú; see note below)
- w (as in English, wash; aw, as ow in English, cow)
- y (as in English, you; ay, as in Spanish hay)

A few notes may be helpful for anyone who wishes to pronounce Quechua words. First, there are only three vowels: **a**, **i**, and **u**. The **a** is not variable, but to native English speakers, the **i** (pronounced like ee in tee-shirt) varies to **e** (as in penny); the **u** (as in tuna) varies to **o** (as in hole). This sound shift happens if the vowels are in the vicinity of a **q** (for example, *muqu* ('knot') sounds like *moqo*; and *chiqchi* ('three-color mottled') sounds like *cheqchi*.) A few cases, such as *lumu lumu* (sounds like Spanish, *lomo*) are harder to account for and are noted as exceptions. *Coca* and *oea* are widely written words, and to avoid confusion have not been rendered *kuka* and *uka*. Published place names such as Chinchero and Cusco have been left in the form in which they usually appear on maps, as has the community name Cuper.

The consonants **ch**, **k**, **p**, **q**, and **t** have three forms: unaspirated (**p** can sound like **b**; **q** can sound like **g**; **t** can sound like **d**); aspirated (**chh**); and followed by a glottal stop (**ch'**). In Chinchero glottal stops are not used consistently, even by a single individual, so we do not worry excessively about them.

There are no diphthongs; two vowel sounds do not occur next to each other. All words are accented on the penultimate syllable.

Chinchero is rapidly becoming bilingual. Variation in the name for peas (*Pisum sativum*) ranges from **alwirha** (by older monolingual Quechua speakers) to the commonly heard **alberga** to standard Spanish *arveja*. Hispanicized spelling is retained for words borrowed from or based on Spanish; for example, **culandro** from *cilantro*. These words should be pronounced as if they were Spanish.

List of Chinchero Plants

FUNGI

MORCHELLACEAE

Morchella deliciosa Fries

Pantemperate and in mountainous regions of the tropics up to tree line.

Cuper, 3450–3500 m. Lightly grazed slopes above Puqpuq waterfall.

Name and use not recorded [D1508]

Morchella elata Fries

Pantemperate and in mountainous regions of the tropics up to tree line.

Cuper, 3600–3900 m. Among tall grass on Antakillqa hillside.

khallampa, pacha khallampa (Qu., *pacha*, 'earth') [D1680A]

Edible and as good to eat as meat (L.P.).

Sometimes cooked in main courses in place of animal stomach (L.P.).

Morchella esculenta (L.) Fries

Pantemperate and in mountainous regions of the tropics up to tree line.

Cuper, 3600–3900 m. Fungus among tall grass on Antakillqa hillside.

khallampa, pacha khallampa (Qu., *pacha*, 'earth') [D1680B]

Edible and as good to eat as meat (L.P.).

Sometimes cooked in main courses in place of animal stomach (L.P.).

TRICHOLOMATACEAE

Lepista glabella (Speg.) Singer

Widely distributed in tropics and subtropics.

Cuper, 3600–3900 m. Antakillqa hillside.

Name and use unknown (L.P.) [D1679]

Not edible (L.P.).

Pleurocollybia cibaria Singer

Tropical South America.

Cuper, 3500–3700 m. On steep rocky slopes among *ichu* and *awarunkhu* on Gutierrezchayuq section of Antakillqa hill.

quncha (Qu.) [F345]

Edible. Can be eaten in hot sauce or main dishes.

Pleurocollybia sp. aff. *cibaria* Singer

Tropical South America.

Cuper, 3600–3900 m. Antakillqa hillside.

llanka quncha (Qu.) [D1678]

An ingredient in hot sauce, as is another fungus, *Inka quncha* (not collected) (L.P.).

LICHENS

DIPLOSCHISTACEAE

Diploschistes aff. *hypoleucus* Zahlbr.

South America, on sandy soils at higher elevations.

Taucca, 4000–4280 m. Lichen on packed soil on open hillside.

allpalla (Qu., 'just soil and nothing more') [K219]

Not a plant, only white soil (G.A., O.H.).

GYROPHORACEAE

Umbilicaria *peruviana* Llano

Peruvian Andes.

Taucca, 3900 m. Lichen on rocks of stone wall in community center.

qaqa sunkha (Qu., *qaqa*, 'rock'; *sunkha*, 'beard') [K230]

Use unknown (G.S.).

PARMELIACEAE

Cetrariastrum aff. *nigrociliatum* (Bouly de Lesdain) W. Culb. & C. Culb.

Tropical Mexico to northern South America.

Taucca, 4000–4280 m. Lichen on hard-packed soil.

qaqa sunkha (Qu., *qaqa*, 'rock'; *sunkha*, 'beard') [K223A]

Use unknown (O.H.).

Hypotrachyna sp.

Taucca, 4000–4280 m. Lichen on hard-packed soil.

ayaq waqtan (Qu., *ayaq*, 'corpse's'; *waqtan*, 'ribs') [K221B]

Used as a remedy for coughs (O.H.).

Xanthoparmelia *peruviansis* Hale

Peru.

Taucca, 4000–4280 m. Lichen on hard-packed soil.

ayaq waqtan (Qu., *ayaq*, 'corpse's'; *waqtan*, 'ribs') [K221A]

Used as a remedy for coughs (O.H.).

PELTIGERACEAE

Peltigera *horizontalis* (Hudson) Baumg.

Pantemperate.

Cuper, 3330 m. Lichen over mosses on steep wet rock slopes below Puqpuq waterfall.

Name and use not recorded [D1822]

Peltigera *polydactyla* (Necker) H.

Pantemperate.

Cuper, 3500–3700 m. Lichen growing with *Peltigera praetextata* (K283B) among mosses on moist steep rock on Gutierrezchayuq section of Antakillqa hillside.

maki maki (Qu., *maki*, 'fist') [K283A]

Use unknown (G.P.).

Peltigera *praetextata* (Floerke) Vainio

Pantemperate in cooler climates.

Cuper, 3500–3700 m. Lichen growing with *Peltigera polydactyla* (K283A) among mosses on moist steep rock on Gutierrezchayuq section of Antakillqa hillside.

maki maki (Qu., *maki*, 'fist') [K283B]

Use unknown (G.P.).

STICTACEAE

Sticta aff. *boliviana* W. Nyl.

Northern South America.

Cuper, 3500–3700 m. Lichen among mosses on moist steep rock on Gutierrezchayuq section of Antakillqa hillside.

maki maki (Qu., *maki*, 'fist') [K284]

Use unknown (G.P.).

TELOSCHISTACEAE

Teloschistes *exilis* (Michaux) Vainio

Widely distributed in the tropics and subtropics.

Cuper, 3400–3810 m. Lichen on steep, rocky,

grazed slopes along trail on K'inti Cuesta hillside, and on twigs of *Barnadesia* sp. near Inca terraces.

ch'apu ch'apu (Qu.) (G.S.) [D1780]

Name unknown [D1376]

Use unknown (G.P., G.S.).

THELEPHORACEAE

Cora pavonia (Sw.) Fries

Widespread in the tropics.

Tauca, 4000–4280 m. Lichen among green moss.

winku siki (Qu., *winku*, 'large glass with straight flaring sides'; *siki*, 'posterior') [K222]

maki maki (Qu., *maki*, 'fist') suggested name (M.T.) [K222]

Name was suggested, perhaps on the spur of the moment, in reference to the lichen's growth form (O.H.). Use unknown (O.H., M.T.).

USNEACEAE

Everniopsis trulla (Achar.) W. Nyl.

Widely distributed in Central and South America.

Cuper, 3500–3700 m. Lichen on rocks on Gu-tierrezchayup section of Antakillqa hillside.

Name and use unknown (G.P.) [K292]

Usnea sp.

Cuper, 3450–3550 m. On rock in quebrada above Puqpuq waterfall.

ch'apu ch'apu (Qu.) (G.S.) [D1479]

kaka suphu (Qu.) (G.P.) [D1479]

Possibly drunk in teas (G.S.). Use unknown (G.P.).

Family indet.

Cuper, altitude unknown. Antakillqa hillside.

papel papelcha (Qu. from Sp. *papel*, 'paper'; *-cha*, 'little') [F279]

Used to make a tea to treat cough (U.I.).

Family indet.

Cuper, altitude unknown.

Name and use unknown [F346]

Lichens ("plants of this kind") are said to prefer to live around people (U.I.).

ALGAE

CHROOCOCCACEAE

Anacystis aeruginosa (Zanardini) Drouet & Daily
Cosmopolitan.

Yanacona, 3750 m. Submerged in water in fallow fields on moist, seasonally inundated pampa.

hamp'atu llullucha (Qu., *hamp'atu*, 'frog'; *llullucha*, 'little vegetable greens') [D1631]

Plant has no use (G.P.).

NOSTOCACEAE

Nostoc commune Vaucher
Cosmopolitan.

Pukamarka, 3800 m. Alga floating in shallow water of Lake Pataqucha.

llullucha (Qu., *llullu*, 'vegetable greens'; *-cha*, 'little') [D1592]

Eaten fresh as a tonic (Sp., *refresco*) (G.S.).

Cooked into main dishes such as *picante* (Sp., 'spicy dish'), or with *tarwi* (*Lupinus mutabilis*) and *llinlli* (freeze-dried *Ullucus tuberosus*) in stew (G.S.). Sold fresh in Chinchero Sunday market and in Cusco market.

Yanacona, 3750 m. Alga in moist depressions and in flooded areas in cultivated fields.

llullucha (Qu., *llullu*, 'vegetable greens'; *-cha*, 'little') [D1632]

This variety is not eaten and is distinguished from the edible variety, which is larger and grows in larger bodies of water (G.P.).

Ayllu Punqu, 3800 m. Alga on moist soil at edge of potato field near shallow Lake Punqulay.

Name and use not recorded [D1636]

MOSSES (MUSCI)

AMBLYSTEGIACEAE

Sciaromium crassinervatum Mitt.

Peru to Chile.

Cuper, 3330 m. Moss on wet rocks on steep cliff by Puqpuq waterfall.

Name and use not recorded [D1796]

BARTRAMIACEAE

Breutelia austro-arcuata (C. Müll.) Par.

Peru, Bolivia, Colombia, Argentina, Guatemala, Mexico.

Cuper, 3300 m. Hatun Wayq'u quebrada, place called Kiq TUYOQ.

Name and use unknown [F282A]

Breutelia nigrescens Herzog

Peru and Bolivia.

Tauca, 4050–4250 m. On steep rocky slopes. *kaka sunqi* (Qu., *kaka*, 'rock'; *sunqi*, 'beard')

(L.H.) [D1523]

Name unknown (G.S.) [D1523]

Used for Christmas decorations (G.S.).

Use unknown (L.H.).

MNIACEAE

Plagiomnium rhynchophorum (Hook.) T. Kop.

Mexico to Brazil and the West Indies.

Cuper, 3360 m. Moss on wet rocks on steep cliff.

Name and use not recorded [D1794]

ORTHOTRICHACEAE

Zygodon pichinchensis (Taylor) Mitt.

Mexico and Costa Rica; Venezuela and Colombia to Peru.

Tauca, 4050–4250 m. Moss on moist rock face, on steep rocky slopes.

kaka sunqi (Qu., *kaka*, 'rock'; *sunqi*, 'beard') [D1522]

Name unknown (G.S.) [D1522]

Use unknown (L.H., G.S.).

Family indet.

Yanacona, 3800 m. Moss on rocks on dry pastured slopes.

yunqu (Qu.) [K129]

Use unknown (T.H.).

Family indet.

Cuper, approx. 3500 m. Moss on moist rocks on Antakillqa hillside, place called Tasakuranaladunpi.

urqun chapun (Qu., *urqun*, 'male'; *chapun*, 'hairy') [F295]

Plant grows erect; use unknown (T.L.).

Family indet.

Cuper, approx. 3500 m. Moss on moist rocks on Antakillqa hillside, place called Tasakuranaladunpi.

china chapun (Qu., *china*, 'female'; *chapun*, 'hairy') [F296]

Use unknown (T.L.).

LIVERWORTS (HEPATICAEE)

AYTONIACEAE

Plagiochasma rupestre (F. Förster) Stephani

Widely distributed in Europe, Africa, Asia, Oceania and North and South America.

Cuper, 4500 m. Summit of Antakillqa hillside. Growing with *Lunularia cruciata* (D1726A).

maki maki (Qu., *maki*, 'fist') [D1726B]

Used to treat kidney or waist-area ailments (L.P.). As a remedy for fainting by married women, the whole plant is boiled for use as a tea or boiled as an ingredient in *chicha* (Qu., 'maize beer') (G.A.).

Plagiochasma sp.

Cuper, 3100 m. On moist bank beneath a large stone in shade.

maki maki (Qu., *maki*, 'fist') [K263]

Use unknown (G.P.).

CLEVEACEAE

Athalamia andina (Spruce) Hatt.

Peru and Argentina.

Cuper, 3800 m. On clay soil on earthen walls in house courtyard.

maki maki (Qu., *maki*, 'fist') [K209]

Use unknown (G.P.).

LUNULARIACEAE

Lunularia cruciata L.

Europe, North Africa, North America and in South America from Peru to Chile and Argentina.

Cuper, 4500 m. Summit of Antakillqa hill. Growing with *Plagiochasma rupestre* (D1726B).

maki maki (Qu., *maki*, 'fist') [D1726A]

Used to treat kidney or waist-area ailments (L.P.). As a remedy for fainting by married women, the whole plant is boiled for use as a tea or boiled as an ingredient in *chicha* (Qu., 'maize beer') (G.A.).

MARCHANTIACEAE

Dumortiera hirsuta (Sw.) Nees

Widely distributed in Europe, Africa, Asia and North and South America.

Cuper, 3360 m. Over mosses and wet rocks among trees on steep cliffs by Puqpuq waterfall.

Name and use not recorded [D1795]

Marchantia sp.

Umasbamba, 3800 m. On wall of irrigation ditch on pampa north of Lake Piuray.

maki maki (Qu., *maki*, 'fist') [K148, K209]

Use unknown (E.C.). No use reported (G.P.).

TARGIONIACEAE

Targionia hypophylla L.

Widely distributed in temperate regions; in South America from Peru to Argentina.

Cuper, 3810 m. Growing with mosses in moist cracks of large eroded rock called Mar-anqaqa.

Name and use unknown (G.P.) [D1387]

FERNS AND FERN ALLIES

Ferns are broadly grouped by Chinchero people into four groups: those with pinnately compound leaves are generically called *raki raki* (Qu., *raki*, 'divided'); and those with entire leaves (such as *Polypodium angustifolium*) are called *qalaywala*, a word of probable Andean origin which is now used to refer to such ferns in Spain and Guatemala as well. Less commonly, reference is made to the resemblance of leaves to the spine and ribs by the name *ayaq waqtan* (Qu., 'ribs of the corpse') or *yana waqtan* (Qu., 'black ribs'). Several species of *Polypodium* are called *inca coca*, a possible reference to former use when chewed as a local coca substitute.

ASPLENIACEAE

Asplenium sp. aff. *A. divaricatum* Kunze (or possibly sp. nov.)

Yanacona, 3800 m. Along stream below Inca ruins.

yana waqta (Qu., *yana*, 'black'; *waqta*, 'ribs') [K141]

Name refers to the black rachis; plant has no use (G.S.).

Asplenium monanthes L.

Southwestern U.S. to Argentina; Hawaii, Africa.

Cuper, 3300–3550 m. Fern hanging from moist rock above waterfall.

raki raki (Qu., *raki*, 'divided') [D1482]

Name and use not recorded [D1805]

Plant has no use (G.P.).

Asplenium triphyllum C. Presl

Colombia to Argentina.

Cuper, 3360 m. Pendulous fern on steep, wet, rocky cliffs by waterfall.

Name and use not recorded [D1791]

DENNSTAEDTIACEAE

Dennstaedtia bipinnata (Cav.) Maxon

Mexico to Panama, Trinidad to Colombia, south to Bolivia; West Indies.

Cuper, 3330 m. Fern in moist soil of old rocky field along stream.

Name and use not recorded [D1821]

DRYOPTERIDACEAE

Cystopteris fragilis (L.) Bernh.

Widely distributed, North and South America, Old World.

Cuper, 3330–3840 m. Fern hanging from steep wet rock cliffs and moist bank at Puqpuq waterfall; forming clumps on large rock; protected on rock wall of house courtyard.

raki raki (Qu., *raki*, 'divided') (G.P.) [K203, D1467]

pampa raki raki (Qu., *pampa*, 'flat place'; *raki*, 'divided') (G.P.) [K147]

Name not recorded [D1790, D1801]

Use unknown (G.P.).

Cystopteris fragilis (L.) Bernh. s.l.

Widely distributed, North and South America, Old World.

Ayllu Punqu, 3800 m. Fern on steep bank in ravine around potato fields along stream.

Name and use unknown (G.S.) [K137]

yana waqta (Qu., *yana*, 'black'; *waqta*, 'ribs') probable name (G.S., S.J.).

Elaphoglossum sp. aff. *E. petiolatum* (Sw.) Urban (or possibly sp. nov.)

Community unknown, 3900 m. Fern on cliff faces along trail from community of Ch'ussu to Cusco, approximately two hours walk from Chinchero center.

qalaywala (Qu., adopted into Sp.) [K215]
Use unknown (T.H.).

Elaphoglossum sp.

Cuper, 3500–3800 m. Fern on hillside.
qalaywala (Qu., adopted into Sp.) [K289]
Use unknown (G.P., C.R.).

Elaphoglossum sp.

Cuper, approx. 3500 m. Fern on moist rocks on Antakillqa hillside, place called Tasakurandaladunpi.

china qalaywala (Qu., *china*, ‘female’) [F292]

Sori said to be “worms” (Qu., *quru*).
Leaves notably thinner than other species. Use unknown (T.L.).

Elaphoglossum sp.

Cuper, approx. 3500 m. Fern on moist rocks on Antakillqa hillside, place called Tasakurandaladunpi.

pampa qalaywala (Qu.) [F293]

Said never to bear sori, and so to be “natural” (Sp., *natural*) at all times (T.L.).
Use unknown (T.L.). T.L. viewed sori as parasites, and so felt that bearing sori was an unnatural condition of the leaf.

Elaphoglossum sp.

Cuper, approx. 3500 m. Fern on moist rocks on Antakillqa hillside, place called Tasakurandaladunpi.

urqun qalaywala (Qu., *urqun*, ‘male’) [F294]

Said never to have sori, and so to be “natural” (Sp., *natural*) at all times. Use unknown (T.L.). T.L. viewed sori as parasites, and so felt that bearing sori was an unnatural condition of the leaf.

Polystichum cochleatum (Klotzsch) Hieron.

Colombia to Bolivia.

Tauca, 4050–4250 m. Fern on steep rocky slopes.

raki raki (Qu., *raki*, ‘divided’) [D1572]

Used for decoration at Christmas time (M.H., G.S.).

Polystichum montevidense (Spreng.) Rosenst. var.

nudicaule (Rosenst.) Tryon

Venezuela, Colombia to Bolivia.

Tauca, 4050–4250 m. Among rocks on steep slopes.

raki raki (Qu., *raki*, ‘divided’) [D1540]

This plant is a “male” (Sp., *macho*) variety, of which *Polystichum orbiculatum* (D1541) is the “female” form (G.S.).

Polystichum orbiculatum (Desv.) Remy & Fée var. *orbiculatum*

Ecuador, Peru, Bolivia.

Tauca, 4050–4250 m. Among rocks on steep slopes.

raki raki (Qu., *raki*, ‘divided’) [D1541]

This plant is said to be a “female” (Sp., *hembra*) variety, of which *Polystichum montevidense* (D1540) is the “male” form (G.S.). A tea made from the root is drunk for the health of the kidneys (G.P.).

Woodsia montevidensis (Sprengel) Hieron.

Haiti, Colombia to Argentina, Uruguay, southern Brazil, also in South Africa.

Cuper, 3330–3500 m. Fern on steep wet rocks, in moist soil along brook in quebrada below Puqupuq waterfall, and at place called Tasakurandaladunpi.

urqun raki raki (Qu., *urqun*, ‘male’; *raki*, ‘divided’) (T.L.) [F291A]

Name and use not recorded [D1807, D1815]

raki raki (Qu., *raki*, ‘divided’) probable name (G.S., S.J.)

Use unknown (T.L.).

POLYPODIACEAE

Campyloneuron amphostenon (Kunze ex Klotzsch) Fée

Southern Mexico, Guatemala, El Salvador, Costa Rica, Venezuela, Colombia to Bolivia.

Cuper, 3450 m. In quebrada above Puqupuq waterfall.

qalaywala (Qu., adopted into Sp.) [D1477]

Used as a tonic (Sp., *refresco*) (G.S.).
Boiled to wash the head for headache (G.S.).

Campyloneuron irregulare Lellinger

Costa Rica, Panama, Colombia, Ecuador, Peru, Bolivia.

Cuper, 3800 m. Fern transplanted to house garden.

qalaywala (Qu., adopted into Sp.) [K112]
The fact that A.H. transplanted this fern to his house garden suggests that he

considered it useful, although no use was reported by him, G.S., or T.H.

Polypodium angustifolium Sw. var. *angustifolium*
Florida, West Indies, Mexico to South America.

Cuper, 3450–3810 m. Terrestrial fern from cracks in rocks on steep hillsides (D1454, D1649) and transplanted to home garden.

Yanacona, 3800 m. Dry pastured slopes and rocks (K128).

qalaywala (Qu., adopted into Sp.) (N.C., B.G., T.H., G.P., G.S.) [D1384, D1454, D1649, K128]

inca coca (Qu.) [D1384]

Used for tea (G.P.) for *desmantu* (N.C., B.G.). The leaves of *Inca coca* (D1384) are chewed, and a tea made from the leaves is used as a purgative (G.P.).

Polypodium buchtienii Christ & Rosenst.

Colombia to Argentina, Uruguay, Brazil.

Cuper, 3450–3600 m. Fern on steep slope.

inca coca (Qu.) (G.S.) [D1432, D1486]

raki raki (Qu., *raki*, ‘divided’) (G.P.) [D1486]

Used as tea (G.S.). Use unknown (G.P.).

Some informants said that the leaves of this plant are chewed as a substitute for coca, but others regarded that as a fable. G.S. and S.J. had both chewed the plant and said that chewing it makes your mouth go to sleep (as does coca).

Polypodium crassifolium L.

Mexico to Bolivia and Brazil, West Indies.

Cuper, 3300–3500 m. In cracks of rock cliffs on steep slope.

qhishwa qalaywala (Qu., *qhishwa* ‘warm place’) (S.J.) [D1751]

qalaywala (Qu.) (G.P.) [D1771]

Sometimes made into a tea for coughs (S.J.). Use unknown (G.P.).

Polypodium lasiopus Kl. vel aff.

Colombia, Venezuela, Peru.

Cuper, altitude unknown. Antakillqa hillside.

Name and use unknown [F274A]

Polypodium sp. aff. *P. polypodioides* (L.) Watt

Mexico to northern South America.

Ayllu Punqu, 3800 m. Fern in ravine on steep bank, around potato fields above stream.

inca coca (Qu.) [K136]

Use unknown (G.S.).

Polypodium pycnocarpon C. Chr.

Peru, Bolivia, and Argentina.

Cuper, altitude unknown. Antakillqa hillside.

Name and use unknown [F274B]

Polypodium sp. (subg. *Polypodium*)

Cuper, 3500–3600 m. Fern on moist, shady undersides of rocks on steep hillside.

inca coca (Qu.) [D1658]

Leaves may be chewed like coca, but without *llipta* (Qu., ‘alkaline admixture for chewing with coca’); tastes sweet (G.A., N.C., B.G.).

PTERIDACEAE

Adiantum digitatum Presl

Ecuador to Argentina and Brazil.

Cuper, 3330 m. Fern on wet rocks by brook in quebrada.

Name and use not recorded [D1802]

yanali, *yana tullu* (Qu., *yana*, ‘black’; *tullu*, ‘stem’) probable name (G.S.)

Use unknown (G.S.).

Adiantum raddianum Presl

Throughout tropical America.

Cuper, 3360 m. Fern on steep wet cliffs by Puqupuq waterfall.

Name and use not recorded [D1789]

yana waqta (Qu., *yana*, ‘black’; *waqta*, ‘ribs’) probable name.

Use unknown (S.J., G.S.).

Cheilanthes incarum Maxon

Peru and northwest Argentina.

Cuper, 3800 m. Terrestrial fern.

aya huqta (Qu., *aya*, ‘corpse’) (G.P.) [D1455]

raki raki (Qu., *raki*, ‘divided’) (G.S.) [D1455]

Use unknown (G.P., G.S.).

Cheilanthes marginata H.B.K.

Venezuela and Colombia, south to Argentina.

Cuper, 3500–3600 m. Fern forming clumps from rock cracks on steep slopes, and on moist rocks on Antakillqa hillside at place called Tasakuranaladunpi.

raki raki (Qu., *raki*, ‘divided’) (G.P.) [D1645]

urqun raki raki (Qu., *urqun*, ‘male’; *raki*, ‘divided’) (T.L.) [F291B]

culantro pusu (Qu., from Sp. *culantrillo de pozo*, 'coriander of the well') (N.C., B.G.) [D1645]

Use unknown (N.C., B.G., T.L., G.P.).
Used to make nativity scenes at Christmas (G.S., S.J.).

Cheilanthes pruinata Kaulf.

Peru to Argentina.

Cuper, 3450–3600 m. Fern forming clumps from cracks in rocks on steep slopes above Puqpuq waterfall and of Antakillqa hillside; on moist rocks on Antakillqa hillside, at place called Tasakuranaladunpi.

ayaq waqtan (Qu., *ayaq*, 'corpse's', *waqtan*, 'ribs') (G.P.) [D1654]

culantro pusu (Qu., from Sp. *culantrillo de pozo*, 'coriander of the well') (N.C., B.G.) [D1654]

inca coca (Qu.) (G.A.) [D1654]

raki raki (Qu., *raki*, 'divided') (G.P.) [D1661]

china raki raki (Qu., *raki*, 'divided'; *china*, 'female') (T.L.) [F290]

puna raki rakicha (Qu., *raki*, 'divided'; *puna*, 'high open area'; *-cha*, 'little') (N.C., B.G.) [D1661]

Name and use unknown (G.S.) [D1514]

For a drink (D1654) and not useful to drink (D1661) (N.C., B.G.). To chew like coca, but without *llipta* (Qu., 'alkaline admixture for chewing with coca') (G.A.). Use unknown (T.L., G.P.).

Notholaena nivea (Poirot) Desv. var. *flava* Hook.

Colombia to Argentina and Brazil.

Cuper, 3330–3550 m. Fern on steep wet rock face.

Name and use unknown (G.S.) [D1464]

Name and use not recorded [D1809]

Pellaea ovata (Desv.) Weath.

Southern Texas to Costa Rica; Colombia and Venezuela south to Argentina; West Indies.

Cuper, 3350–3500 m. Hillside.

Name and use not recorded [D1768]

raki raki (Qu., *raki*, 'divided') probable name (G.S., S.J.)

Pellaea ternifolia (Cav.) Link var. *ternifolia*

Southwestern United States to Nicaragua; Colombia and Venezuela to Argentina; West Indies; Hawaiian Islands.

Cuper, 3500–3600 m. Fern forming dense clumps in thin soil among rocks on steep hillside.

inca coca de la puna (Qu., Sp.) (G.P.) [D1650]

culantro pusu (Qu., from Sp. *culantrillo de pozo*, 'coriander of the well') (N.C., B.G.) [D1650]

Name and use unknown (G.A.) [D1650]

Used for tea (G.P.). Use unknown (N.C., B.G.).

Pteris muricata Hook.

Mexico to Colombia and Peru.

Cuper, 3360 m. Large fern on steep wet rock cliffs at Puqpuq waterfall.

Name and use not recorded [D1786, D1787]

raki raki (Qu., *raki*, 'divided') probable name of both specimens (S.J., G.S.)

SALVINIACEAE

Azolla aff. *filiculoides* Lam.

Western United States, Mexico, Guatemala, Colombia to Chile.

K'aparay (Ayllu Punqu), 3800 m. Forming dense mats floating on shallow pools by Lake Piuray.

Name and use unknown [K267]

G.S. noted that he had never seen this plant before.

SELAGINELLACEAE

Selaginella peruviana (Milde) Hieron.

Southwestern United States south to Argentina.

Cuper, 3330 m. Steep wet rock slopes along brook.

Name and use not recorded [D1810]

Selaginella sp. (inarticulate group)

Pirqa Kachun, 3600 m. Under a large rock on side of a small watercourse.

kiru kiru pasto (Qu., *kiru*, 'tooth'; Sp., *pasto*, 'forage') [K293]

Plant has no use except as sheep fodder (C.R.).

Selaginella sp. (inarticulate group)

Cuper, 3450–3550 m. On moist rocks along stream in quebrada.

Name and use unknown (G.P.) [D1485]

THELYPTERIDACEAE

Thelypteris glandulosolanosa (C. Chr.) Tryon

Ecuador, Peru and Bolivia.

Cuper, 3450–3600 m. Terrestrial fern in wet creek draw, and along stream in quebrada above Puqpuq waterfall.

raki raki (Qu., *raki*, 'divided') [D1462, D1483]

Leaves are used in the process of fermentation of sprouted corn (Sp., '*jora*') for maize beer (Sp., '*chicha*'), to line fermentation pit and to cover sprouting corn (N.C., G.P.). Used for decoration at Christmas time (G.S.).

Thelypteris nitens (Desv.) Tryon

Ecuador and Peru.

Cuper, 3360–3450 m. On moist wall of Puqpuq waterfall.

mayupi raki raki (Qu., *mayupi*, 'in the running water'; *raki*, 'divided') (S.J.) [D1740]

raki raki (Qu., *raki*, 'divided') (B.G.) [D1797]

Name and use not recorded [D1788]

Use unknown (B.G., S.J.).

Thelypteris rufa (Poir.) A. R. Smith

Ecuador to Bolivia.

Ayllu Punqu, 3800 m. Fern in moist soil at edge of stream around potato fields.

raki raki (Qu., *raki*, 'divided') [K135]

Leaves are used in the process of fermentation of sprouted corn (Sp., '*jora*') for maize beer (Sp., '*chicha*'), to line fermentation pit and to cover sprouting corn (G.S.).

EQUISETACEAE

Equisetum bogotense H.B.K.

Venezuela to Peru.

Cuper, 3450–3550 m. In wet soil along creek in quebrada above waterfall.

cola de caballo (Sp., 'horsetail') [D1478, D1814]

The entire plant is made into a tea for waist-area ache (G.P.). The fresh plant is sold in the Chinchero Sunday market.

LYCOPODIACEAE

Lycopodium clavatum L.

Temperate and boreal regions of northern

hemisphere tropics of Old and New World.

Cuper, 3300 m. In Hatun Wayq'u quebrada, place called Kiqtuuyuq.

wiñay wayna-china (Qu., *china*, 'female') [F280]

Plant said to be female of F281. Use unknown.

Lycopodium clavatum L. ssp. *contiguum* (Klotzsch)

Øllgard

Andean South America.

Cuper, 3300 m. Creeping herb among *ichus* (Qu., 'high-altitude grasses') on steep dry slopes of Antakillqa hill, in quebrada called Hatun Wayq'u.

wiñay wayna-china (Qu., *china*, 'female') [F285]

Plant is said never to flower. Only use is in making Christmas scenes.

Lycopodium crassum Willd. vel aff.

Southern Mexico to Panama, Andean South America south to Peru.

Cuper, 3300 m. In Hatun Wayq'u quebrada, place called Kiqtuuyuq.

wiñay wayna-urqu (Qu., *urqu*, 'male') [F281]

Plant said to be "male" of F280. Use unknown.

Lycopodium sp. aff. *L. hartwegianum* Spring

Southern Mexico to Costa Rica; Andes from Venezuela to Peru.

Cuper, 3330 m. Herb hanging from steep wet rocks by brook.

Name and use not recorded [D1803]

GYMNOSPERMS

EPHEDRACEAE

Ephedra americana Humb. & Bonpl. ex Willd.

Ecuador to Argentina.

Cuper, 3700 m. Shrub on cliff.

pinku pinku (Qu.) (N.C., G.S.) [D1417]

naranja naranja (Qu. from Sp., *naranja*, 'orange') (N.C., G.S.) [D1417]

Latter name refers to the plant's small orange fruits (G.S.). Drunk as a tonic (Sp., *refresco*) and as a tea, possibly to help the kidneys (N.C.).

Ephedra rupestris Benth.

Cuper, 4000 m. Among moss on rock on An-

takillqa hillside at place called Unu Ur-phuyuq.
pampa pinku pinku (Qu., *pampa*, 'low-growing') [F305]
 Used to make a tea to treat lung problems (T.L.).

ANGIOSPERMS

AMARANTHACEAE

Alternanthera caracasana H.B.K.

Mexico, West Indies, Colombia, and Venezuela south to Bolivia.
 Plaza of Chinchero, 3810 m. Low spreading herb among packed grasses.
kipalvu (Qu.?) [F261]
 Taken in tea at childbirth; tea made from unwashed herb with dirt adhering to roots (S.J., G.S.). Plant can also be used to treat 'fright' (Sp., *susto*) or falls if they cause problems (S.J., G.S.).

Gomphrena elegans C. Martius

Peru and Bolivia.
 Cuper, 3370 m. Herb on steep brushy hillside.
payqu (Qu.) [D1734]
 Common herb used as condiment in cooking (S.J.).

Iresine celosia L.

Widespread tropical American weed.
 Cuper, 3450 m. Herb below waterfall.
payqu (Qu.) (G.A., G.S.) [D1737]
 Name and use unknown (S.J.) [D1737]
 Used as condiment in cooking (G.S.).
 Leaves taken in tea for upset stomach (Sp., *cólicos*) (G.S.).

AMARYLLIDACEAE

Agave americana L.

Native to Mexico; widely cultivated.
 Along trails throughout Chinchero except at higher altitudes.
paqpa (Qu.) not collected
 Plant is encouraged for its function as a fence.

Alstroemeria pygmaea Herbert

Southern Peru, Bolivia, Patagonia.
 Cuper, 4500 m. Herb on hilltop in puna.

Name and use not recorded [D1717]
phalcha (Qu.) possible name (G.A.) [D1717]
 Resembles *puya puya* (Qu.) (S.J., G.S.).

Bomarea andimarcana (Herbert) Baker

Peru.
 Taucca, 4050–4250 m. Herb on rocky slopes (D1534A).
 Cuper, 3750 m. Erect herb on lands belonging to San Juan below ruins (F264).
ramos ramos (Qu., from Sp. *ramo*, 'bouquet') (L.H.) [D1534A, F264]
varilla varilla (Qu., from Sp. *varilla*, 'little rod') (G.S.) [D1534A]
 Use unknown (L.H.). Sweet stems of erect variety are chewed like *caña* (Sp., sugar cane) or corn stalks by shepherds, after stripping off the leaves (G.S., S.J.). Young children compete to find them (G.S.).

Bomarea dulcis (Hook.) Beauv.

Peru and Bolivia.
 Taucca, 4000–4200 m. Herb on cliffs.
ramos ramos (Qu., from Sp. *ramo*, 'bouquet') (G.S.) [K191, D1534B]
ramos de la quebrada (Sp., 'ramos from the canyon') (T.H.) [K191]
 Sweet stem is eaten (T.H.). Use unknown (G.S.).

Bomarea dulcis (Hook.) Beauv. vel sp. aff.

Cuper, 3750 m. In large pockets of rich earth in rock outcrop above Chinkana.
 Name unknown [F349B]
 Tubers not edible (G.S.).

Bomarea ovata (Cav.) Mirbel

Peru and adjacent parts of Bolivia.
 Cuper, approx. 3500 m. Antakillqa hillside, place called Tasakurana.
ramos ramos (Qu., from Sp. *ramo*, 'bouquet') [F268A, F268B]
 Edible fruits; kids eat and play with them.

Bomarea sp.

Ayllu Punqu, 3700 m. Herb on rock outcrop.
 Cuper, 3810 m. Herb on grazed hillside.
ramos ramos (Qu. from Sp., *ramo*, 'bouquet') [D1374, D1448]
 Plant has no use (G.P.). Shepherd children eat the sweet stem of this plant (as they also eat cornstalks) (G.S.).

Hypoxis decumbens L.

Widely distributed in tropical America.

Ayllu Punqu, 3800 m.

Yanacona, 3750 m. Place called Q'allas.

khuchi khuchi (Qu., *khuchi*, 'pig') [K130, F256]

Children play games with black tuberous roots, pretending the roots to be little pigs (T.H.). Use unknown (G.S.).

Cuper, 3500–3600 m. Herb on dry, rocky pastured slopes.

Name unknown (N.C., B.G.) [D1652]

uchu kaspá qhuracha (Qu., *qhura*, 'herb') (B.G.) possible name [D1652]

Use unknown (N.C., B.G.).

Stenomesson incarnatum (H.B.K.) Bak.

Peru, Ecuador.

Cuper, 3810 m. Herb cultivated in house garden.

chiwanway (Qu.) [K104]

Flowers used in bouquets and table decorations (G.S.). Sold in Chinchero Sunday market.

Stenomesson recurvatum (Ruiz & Pavón) Baker
Peruvian Andes.

Yanacona, 3810 m. Herb transplanted to garden.

chiwanway (Qu.) [K113]

Grown as decorative plant. Flowers are collected and worn on hats. Also called *qhilla t'ika* (Qu., *qhilla*, 'lazy'; *t'ika*, 'flower') because it doesn't flower in the rainy season as most plants do, but rather only in the dry season (S.J., G.S.).

ANACARDIACEAE

Schinus molle L.

Ecuador to Chile, also widely cultivated.

Urquillos, 3100 m. Tree along trail.

molle (Sp.) [K320]

Fruits used as peppery condiment in cooking (uncommonly in Chinchero) (U.I.). Wood used as firewood.

ASCLEPIADACEAE

Cynanchum tarmense Schltr.

Peru.

Cuper, 3600 m. Vine on steep slopes and along trail above quebrada at place called Chaqchakillay.

ambar ambar (Qu., from Sp. *ambar*, 'amber') (N.C., G.S.) [D1458, F270]

cabra cabra (Qu. from Sp., *cabra*, 'goat') alternate name (N.C.) [D1458]

Leaves and stems are boiled; the decoction is used to bathe the head as a remedy for headache and fever caused by 'wind in the head' (N.C.). A "cool" (Sp., *fresco*) plant, which is boiled in the evening, then used to wash the head the following morning to treat ailments such as *sirenasqa* (Qu. from Sp., 'contamination by a siren spirit') (G.S.). Used to bathe children against damage caused by fright (Sp., '*susto*'), and to reduce tonsil inflammation (G.S.). B.G. boiled the plant, squeezed the juice and used it to wash her hair as an anti-dandruff agent (S.J., G.S.).

Metastelma sp.

Cuper, 3450–3550 m. Herb on lightly grazed slopes.

pimpinilla (Qu., from Sp., *pimpinela*, 'bur-net') suggested name (G.S.) [D1512]

p'isqu sísaq (Qu., *p'isqu*, 'five') suggested name (B.G.) [D1512]

Use unknown (B.G., G.S.). Steeped as tea drunk to treat stomachache (Qu., *sunqu nanay*) (S.J., G.S.).

Sarcostemma lysimachioides (Wedd.) R. Holm

Central and Southern Peru.

Yanacona, 3750 m. Creeping herb on ground on hillside near Pirqa Kachun at place called Q'allas.

waka waka (Qu., from Sp. *vaca*, 'cow') [F254]

Sarcostemma solanoides (H.B.K.) Decne.

Peru, Bolivia, and Chile.

Cuper, 3450–3500 m. Herb on lightly grazed slopes.

ambar ambar (Qu., from Sp. *ambar*, 'amber') [D1495]

Use unknown (G.S.).

BASELLACEAE

Boussingaultia diffusa (Moq.) Hauman

[*Anredera diffusa* (Moq.) Sperling, comb. nov. ined.]

Colombia to Peru.

Cuper, 3150 m. Vining herb on steep slope.

Name and use unknown (B.G., Am.Q., P.P., G.S.) [K243]

Pirqa Kachun, 3000–3330 m. Vining herb on dry hillside.

Name and use unknown [K305]

Similar to *lisas* (Qu., *Ullucus tuberosus*) and also to *willq'u* (Qu., 'vine'; refers in Chinchero to at least seven vining species), a name heard in Urquillos (Am.Q., G.S.). Not *willq'u* (P.P., B.G., Am.Q., G.S.).

Boussingaultia sp. aff. *diffusa* (Moq.) Volkens

[*Anredera diffusa* (Moq.) Sperling, comb. nov. ined.]

Peruvian Andes.

Cuper, 3810 m. Vine transplanted from wild habitat and cultivated on stone wall in house courtyard.

verguylawas (Qu. from Sp., *verdolaga*, 'purslane,' *Portulaca oleracea* L.) [K202]

Plant is ground and made into a poultice, which is applied to the cheek with a piece of white paper to treat toothache (L.P.). Owner's grandfather transplanted the plant to this yard many years ago because it was considered such a useful plant (L.P.).

Ullucus tuberosus Caldas (fig. 19)

Southern Venezuela to northern Argentina.

Native to the Andes, domesticated from wild species.

Pukamarka, 3800 m. Herbs cultivated for edible tuber by Jo.C. in his fields at edge of Lake Piuray.

zanahoria lisas (Sp., *zanahoria*, 'carrot') (Jo.C.) [K156]

qhillu chuqcha lisas (Qu., *qhillu*, 'yellow'; *chuqcha*, 'hair') [K156]

Tubers yellow (Jo.C.). Stems reddish.

papas lisas (Sp.) [K157]

Tubers round and white with red spots (Jo.C.). *Papas lisas* include *arequipa lisas* and *puka papan lisas*.

arequipa lisas (Sp., *Arequipa* is a Peruvian city) [K158]

Tubers round and yellow, like oranges, though smaller (Jo.C.).

Taucsa, 3900 m. Herb cultivated for edible tuber.

arequipa lisas (Sp., *Arequipa* is a Peruvian city) [K237]

This variety was said to have been grown in the Chinchero area for only three to four years and was originally purchased in the Cusco market (U.I.).

phantasma lisas (local Sp., *fantasma*, 'ghost') (U.I.) [K235]

Tubers roundish and yellow-orange with red dots.

tiqtiharo lisas (Qu.) (U.I.) [K236]

Tubers long and white with pink-red blotches and dots.

yuraq lisas (Qu., *yuraq*, 'white') (U.I.) [K234]

Tubers long, curved, and white with a few small pink blotches.

zanahoria lisas (Sp., *zanahoria*, 'carrot') (U.I.) [K233]

Tubers rounded, oblong, orange-yellow when mature.

puka papan lisas (Qu., *puka*, 'red'; *papan*, 'potato') not collected

Said to be very large tubers cultivated on Antakillqa hill.

G.S. and S.J. pointed out the distinction that the stems of *tiqtiharo lisas* (K157 and K236) are long and thin, while those of *papas lisas* are shorter and fatter. They added that tubers can grow round like a cabbage, or can grow to be six inches long, but the leaves are not resistant to frost and other attacks. K234 is a kind of *tiqtiharo*, although M.L. calls them *yuraq* (Qu., 'white').

The name *lisa*, or *papa lisa*, is from the Spanish, *liso*, 'smooth', a reference to the slippery texture of the cooked vegetable. People in Chinchero recognize the Quechua word *ulluqu* in reference to this crop, but do not use it except in occasional reference to wild varieties. They judge that *lisa* is a Quechua word and *ulluqu* is Spanish, whereas linguists judge the reverse to be true.

All *lisas* are planted in September, harvested in May–June (Jo.C.). With one exception, all varieties are traditional local cultivars; that is, although seed tubers may be bought in other parts of Peru, notably Paucartambo, Chinchero people never get seed of 'improved varieties' from the Ministry of Agriculture (Jo.C.). *Llinlli* (freeze-dried tubers) can be made from any variety (Jo.C.). The only fertilizer used is domestic animal manure (Sp., *guano de corral*) (Jo.C.). *Lisas* are subject to no diseases except wet rot (Qu., '*kiyuqk'a*') (Jo.C.). *Arequipa lisas*, the only recently introduced cultivar, are said to be particularly affected by *kiyuqk'a* (alternately



FIG. 19. Woman displays *lisas* (*Ullucus tuberosus*) for sale or barter in Chinchero Sunday market. She has graded them according to size and variety in order to meet buyers' functional and aesthetic preferences (photo C.S.).

kipqi) which causes the plants to turn black and die after growing for only four months.

Although we heard rumors in Chinchero that people were breeding *lisas*, these were unsubstantiated. The existence of seeds following the flowers of *Arequipa lisas*, first pointed out to us by L.H., confirmed the potential for more complex selection activity. The collection includes all *Ullucus* cultivars known to residents in 1982, and all varieties but one (*Arequipa lisas*) are traditional (Sp., *antiguo*) landraces.

Cuper, 3000–3900 m. Feral vines on rocky scree slopes of Antakillqa hillside.

atuq lisa (Qu., *atuq*, 'fox'; *lisa*, *Ullucus*) (G.P.) [D1775]

atuq ulluqu (Qu., *atuq*, 'fox') (L.P.) [D1681]

Name unknown (G.P.) [K211]

These varieties are not cultivated and have no use (G.P., L.P.). These examples are similar in appearance to *q'illu lisa* (Qu., *q'illu*, 'yellow') which

are no longer planted because they do not produce tubers (S.J., G.S.).

Ayllu Punqu, 3810 m. Vining on wall of house courtyard.

atuq lisas (Qu., *atuq*, 'fox'; *lisa*, *Ullucus*) [F321]

*atuq ulluqu*s (Qu., *atuq*, 'fox'; *ulluqu*s, *Ullucus*) [F321]

Forms tubers up to 2 cm long that are not edible (S.J., G.S.). A cool (Sp., *fresco*) plant (S.J., G.S.). Ground to make a poultice for aches of teeth, tonsils (S.J., G.S.).

BEGONIACEAE

Begonia clarkei Hook. f.

Andes of southern Peru and Bolivia.

Cuper, 3600 m. Herb on steep slope.

achanqharas (Qu.) (AC, N.C., S.J., G.S.) [D1443]

While pasturing, children peel and eat epidermis of leaves (as they do strawberries) (N.C.). Flowers used for decoration; roots possibly used for remedy (G.S.). As children, we squeezed the juice of this plant and mixed it with that of *trago trago*, to make ourselves drunk (S.J., G.S.). The whole plant is squeezed with *chili chili* (Qu., *Geranium* and other spp.) and given to babies with fever, when their tongues turn white (S.J.). Flowers can be pink, red, or white (S.J., G.S.).

BERBERIDACEAE

Berberis boliviana Lechler

Southern Peru and Bolivia.

Cuper, 3600 m. Woody shrub on steep grazed hillside.

qhishwa ch'iqchi (Qu., *qhishwa*, 'warm place'; *ch'iqchi*, 'colors combined with spots') [D1730]

Spiny shrub encouraged to grow in living fences (G.S.). Stems are made into spindles and are used for firewood (S.J.).

Berberis cliffortioides Diels

Central and southern Peru.

Cuper, 3810 m. Shrub along trail.

ch'iqchi (Qu., 'colors combined with spots') [D1356]

Consumed as a tea to treat measles, *escarlatina* (Sp., 'scarlet fever') (G.P.). Used to treat illnesses of children (L.H.). Root provides a yellow dye (T.H.). This variety, *ch'iqchi*, which is from Chinchero center, is distinguished by its long spines from *qhishwa ch'iqchi* (S.J., G.S.). Fruits are eaten, as are those of *mullaka*; they dye the tongue purple (S.J., G.S.). Dye experiments with this plant got no results (S.J., G.S.).

Berberis saxicola Lechler

Southern Peru.

Tauca, 4050–4250 m. Shrub on steep rocky slope.

upa ch'iqchi (Qu., *upa*, 'deaf mute,' or in this instance, 'thornless'; *ch'iqchi*, 'colors combined with spots') [D1560]
qhishwa ch'iqchi (Qu., *qhishwa*, 'warm place'; *ch'iqchi*, 'colors combined with spots') alternate name [D1560]

Used to make living fences (G.S.). *Qhishwa ch'iqchi* (D1560 and D1730) is distinguished by its larger leaves and shorter spines from *ch'iqchi* (S.J., G.S.).

BIGNONIACEAE

Tecoma stans (L.) Juss. ex H.B.K.

Florida to Mexico, south to Argentina.

Cuper, 3300–3450 m. Woody shrub along brook (D1754) and along trail (D1758).

waranway (Qu.) [D1754, D1758]

Name and use unknown (S.J.) [D1754]

Wood used to make potato hooks (English, 'tools for harvesting potatoes') and foot plows (Qu., *chakitaqllas*) (G.P., G.S.).

BORAGINACEAE

Allocarya humilis (Ruiz & Pavón) E. Greene

Peru and Bolivia.

Tauca, 4000–4250 m. Spreading herb on steep, rocky, grazed slopes.

Name and use unknown (G.S.) [D1525, K182]

Amsinckia hispida (Ruiz & Pavón) I. M. Johnston

Ecuador to Chile and Argentina.

Cuper, 3810 m. Along trail.

Name unknown (G.P.) [D1369]

ambrosacha qhura (Qu., from Sp. *ambro-*

sia; Qu., *qhura*, 'herb') possible name (G.P.) [D1369]

Plant has no use (G.P.).

Hackelia revoluta (Ruiz & Pavón) I.M. Johnston
Peru to Argentina through the Andes.

Cuper, 3100–3600 m. Herb on steep rocky slopes and on banks of brook.

Name and use unknown (N.C., B.G., Am.Q., P.P., G.S.) [D1671, D1816, K258]

Similar to *supay kayqu* (Qu., locally *Nicotiana glauca*); not drunk (B.G.).

Heliotropium incanum Ruiz & Pavón

Peruvian Andes.

Cuper, 3100–3150 m. Herb on somewhat dry slope with large rocks.

Name and use unknown (B.G., Am.Q., P.P., G.S.) [K256]

Leaves similar to those of *ñuqchu* (Qu., *Salvia* spp.) (B.G., Am.Q., G.S.).

Lithospermum peruvianum A. DC.

Ecuador to southern Peru.

Yanacona, 3800 m. Herb in dry, hard-packed soil on pastured rocky slopes.

purun perejil (Qu., *purun*, 'fallow'; Sp., *perejil*, 'parsley') (B.G.) [K131]

Name unknown (T.H., Am.Q., P.P., G.S.) [K131]

Use unknown (B.G., T.H., Am.Q., P.P., G.S.).

BROMELIACEAE

Puya ferruginea (Ruiz & Pavón) L. B. Smith

Ecuador to Bolivia, 1800–3800 m.

Cuper, 3350–3550 m. Terrestrial bromeliad among rocks on steep slope in quebrada and on Antakillqa hillside.

achupaylla (Qu.) (G.P., G.S.) [D1488, D1774]

Leaves gathered for guinea pig fodder (G.S.).

Puya weberbaueri Mez

Southern Peru and northwestern Bolivia, 2800–4000 m.

Cuper, 3500–3600 m. Bromeliad on steep rocky slopes of Antakillqa hillside.

awarunkhu (Qu.) (G.A., N.C., B.G., G.S.) [D1647]

Collected for cattle feed and guinea pig fodder (G.A.). *Llipta* (Qu., 'alkaline admixture for coca chewing') is made from the dried flowers of this plant

(Qu., *tainu*), which are burned to ashes with *isphinhuy* (Qu.) on hillsides by shepherds (G.S.).

Tillandsia capillaris Ruiz & Pavón

Peru to Argentina.

Yanacona, 3810 m. On face of rock.

qaqa sunkha (Qu., *qaqa*, 'rock'; *sunkha*, 'beard') (G.S.) [D1399]

fosforo fosforo (Qu., from Sp., *fósforo*, 'match') (N.C.) childhood name [D1399]

Name unknown (Al.Q.) [D1399]

Use unknown (N.C., G.S.). Similar to *salvahina* (Qu.), used to treat cough (Al.Q.).

Tillandsia nana Baker

Peru and Bolivia, 2900–3500 m.

Cuper, 3300–3500 m. Hanging on rock faces on Antakillqa hillside.

urqu wiñay wayna (Qu., *orqo*, 'hill'? 'male'?; *wiñay*, 'to live'; *wayna*, 'youth') (G.P.) [D1772]

Name unknown (G.P.) [K210]

Use unknown (G.P.).

Tillandsia oroyensis Mez

Southern Ecuador to Peru, 800–3400 m.

Cuper, 3300–3450 m. On rock face along brook in quebrada.

wayq'untuy (Qu.) [D1752]

Similar to *awarankhu* (Qu., *Puya weberbaueri*); water that accumulates in plant is drunk for thirst (S.J.).

Tillandsia recurvata (L.) L.

Southernmost United States to Argentina.

Cuper, 3100–3150 m. On tree.

qaqa sunkha (Qu., *qaqa*, 'rock'; *sunkha*, 'beard') (Am.Q., P.P., G.S.) [K238]

salvia del cerro (Sp., 'sage of the hill') (T.H.) alternate name [K238]

Name and use unknown (B.G., G.P.) [K238]

Useful only as decoration (P.P.). Use unknown (T.H.).

Tillandsia usneoides (L.) L.

Southern United States to Central Argentina and Chile.

Cuper, 3350–3500 m. On rock face, on Antakillqa hillside (D1769) and above Puqpuq waterfall (D1742).

salvahina (Qu., from Sp. *salvia*, Qu. *-hina*, '-like') (G.S.) [D1742]

salwahi (Qu.) (B.G.) [D1769]

wihuhu (Qu. from Sp., *bejuco*, 'vine') (G.P.) [D1769]

Gathered at Christmas for use in Nativity scenes to make a bed for the Christ figure (G.S.). Sold in streets in Cusco at Christmas. Placed in nests in chicken houses as nesting material (B.G.). Use unknown (G.P.).

CACTACEAE

Erdisia aff. *erecta* Backeb.

Southern Peru.

Cuper, 3450–3700 m. Cactus along trail and on lightly grazed slopes.

aña panqu (Qu.) (G.P.) [D1425]

khishqa (Qu., 'plant with spines') (G.P.) [D1493]

huwisk'i (Qu.) alternate name (G.S.) [D1493, D1425]

Use unknown (G.P., G.S.). One informant reported, perhaps jokingly, that the juice of the fruit of this plant was an intoxicant (G.S.).

Lobivia aff. *backebergii* (Werderm.) Backeb. spp.

hertrichiana (Backeb.) Rausch ex G. Rowley
Southeastern Peru.

Tauca, 4050 m. On adobe wall by house.

aña panqu (Qu.) [D1590]

Use unknown (G.S.).

Opuntia aff. *floccosa* Salm-Dyck or *O. lagopus* Schumann

Both species in the high Andes from central Peru to central Bolivia.

Cuper, 4500 m. Cactus forming low mats on hilltop.

ruq'a (Qu.) (G.A., L.P.) [D1699, D1700]

q'ara ruq'a (Qu., *q'ara*, 'skin') (B.G.) [D1699]

inka ruq'a (Qu.) (B.G.) [D1700]

Used as poultice for toothache (G.A.).

Inka ruq'a is useful with egg and *trago* (Sp., 'cane alcohol') to externally bathe upset stomachs (B.G.). *Q'ara ruq'a* was said by B.G. to have no use, as were both varieties by L.P. B.G. distinguished the varieties by the smooth, hairless form of *q'ara ruq'a*.

Opuntia aff. *subulata* (Muehlenpf.) Engelm.

Origin uncertain, perhaps Argentina. Widely cultivated.

Cuper, 3600–3800 m. Grown in hedgerows

and on Antakillqa hillside at place called Tanqar Qhasa.

k'aqla (Qu.) [D1459, F317]

Use unknown (G.S.). Plants had been moved to form a fence around a field. The fruits of this cool (Sp., *fresco*) plant are edible; interior of fruits and leaves are ground to make a poultice for toothaches or tonsils (S.J.). Spines used as tooth- and earpicks (S.J., G.S.).

Genus indet.

Cuper, altitude unknown. Scattered on steep slope of Antakillqa hillside, place called Ch'ampatakana.

aña panqu (Qu.) [F318]

Fruits edible and said to be very sweet (U.I.).

Genus indet.; probably *Opuntia*

Ayllu Punqu, 3810 m. On wall of house courtyard; said to have been transplanted 40 or 50 years ago.

aña panqu (Qu.) [F319]

Fruits edible (U.I.).

CALYCERACEAE

Acicarpa procumbens Less.

Southern Peru, Brazil, Argentina.

Ch'usu, 3800 m. Herb along trail.

estrella khishqa (Sp., *estrella*, 'star'; Qu., *khishqa*, 'spiny plant') [K274]

Plant is made into a tea for altitude sickness (G.P.).

Moschopsis sp.

Cuper Alto, 4650 m. Above place called Maragaritayuq. Herb in red sand on rock.

lluthu lluthu (Qu.) possible name [F316]

Name and use unknown [F316]

CAMPANULACEAE

Lobelia tenera H.B.K.

In the Andes from Venezuela to southern Peru.

Cuper, 3500–3800 m. Small herb on grassy slope of Antakillqa hillside (K286); among *ichus* in moist soil (F354) at Simp'il; herb between stones in Inca wall in Inca ruins below Chinchero plaza (F356).

violetas (Sp.) (C.R.) [K286]

puna violetas (Qu., *puna*, 'high area'; Sp.) (P.P.) [K286]

maransiras (Qu.) possible name
(C.R.) [K286]
pavitos (Qu.) (B.G.) [K286]
Name unknown (Am.Q.) [K286]
Name and use unknown [F354, F356]
Used to make a tea for coughs (Am.Q.,
C.R., P.P.). Use unknown (B.G.).

Lysipomia laciniata* A. DC. var. *laciniata
Southern Peru and Bolivia.

Tauca, 4050–4250 m. Herb among mossy
rocks on steep slopes above community.
pampa haminqay (Qu., *pampa*, ‘flat open
place’) [D1548]
Name unknown (G.S.) [D1548]
Use unknown (L.H., G.S.).

***Lysipomia laciniata* A. DC. var. *vulgaris* (Wedd.)
E. Wimm.**

Peru and Bolivia.
Cuper, 4500 m. Herb on summit of Anta-
killqa hill.
sutuma (Qu.) [D1710]

This variety of *sutuma* is said to be fe-
male (Sp., *hembra*) (L.P.). A tea is
made from the whole plant for the
kidneys (G.A., L.P.).

***Siphocampylus tupaeformis* A. Zahlbr.**
Southern Peru and Bolivia.

Pirqa Kachun, 3620 m. Herb in fallow field.
lakre (Qu. from Sp., *lacre*, ‘red’) (P.P.)
[K317]
colondrina (Sp.?) (P.P.) alternate name
[K317]
velapi ñuqchu (Qu. *velapi*, ‘orange’)
(C.R.) [K317]
sagraq ñuqchu (Qu., *sagraq*, ‘devil’s’)
(Am.Q., G.S.) [K317]
china china (Qu.) (Am.Q., G.S.) possible
name [K317]
Used for decoration (C.R.), and as a tea
for intestinal blockage (Sp., *cólico*)
(P.P.). Use unknown (Am.Q., G.S.).

***Wahlenbergia peruviana* A. Gray**
Peru and Bolivia.

Tauca, 4000–4280 m. In gravelly soil on ex-
posed slopes.
Name and use unknown (O.H.) [K225]
taruqa ñuñu (Qu., *taruqa*, ‘deer’; *ñuñu*,
‘breast’) (B.G.) [K225]
Has sweet milk, but no known use (B.G.).

CANNACEAE

***Canna* × *indica* L.**

Native to South America. Widely cultivat-
ed in the tropics.
Cuper, 3200 m. Cultivated in small open field
in warm quebrada.
achira (Qu.) [K212]

Cultivated experimentally for edible un-
derground portions (G.P.). L.P.
planted *achira* in his low, warm corn
field as an experiment to determine
whether or not he could make it grow
in Chinchero. His interest in plant-
ing a wide range of cultigens was
challenged by this crop which is con-
sidered impossible to grow at such a
high altitude. Ultimately, he decided
that while not impossible, it was not
worth the effort.

CAPRIFOLIACEAE

***Sambucus peruviana* H.B.K.**

Peru to Argentina, Central America.
Cuper, 3810 m. Tree along trail.
sauk’u (Qu.) (G.P., G.S.) [D1342]

Leaves are mixed with leaves of *markhu*
(*Ambrosia artemisioides*) in a pot and
toasted (heated without water); the
juice that gathers on the bottom of
the pot is rubbed on the belly to treat
stomachache (G.P.).

CARYOPHYLLACEAE

***Arenaria* aff. *digyna* Schldl.**

Southern Peru, Chile to Bolivia, Mexico.
Yanacona, 3800 m. Low herb in hard packed
soil on rocky slope.
p’isqu isan (Qu., *p’isqu*, ‘five’) [K132]
Use unknown (G.S.). Fodder (T.H.).

***Arenaria lanuginosa* (Michaux) Rohrb.**

Southeastern United States south to Boliv-
ia.
Cuper, 3450–3550 m. Herb above waterfall
on rocky slopes.
p’isqu sisaq (Qu., *p’isqu*, ‘five’) [D1475,
F272A]
Plant is given as a tea to women who
menstruate at the wrong time in or-
der to make them regular (G.S.).

Yanacona, 3810 m. Herb on rock outcrop.
Name and use unknown (G.S., N.C.) [D1401]
N.C. recalled that her mother had recommended this plant to her as something to give to your children so that they are less hungry.

Cerastium tucumanense Pax

Southern Peru to Chile and Argentina.
Tauca, 4050–4250 m. Herb on steep rocky slopes.
p'isqu sisan (Qu., *p'isqu*, 'five') (L.H.) [D1556]
Use unknown (L.H.). Probably not *pisq'u sisaq* (G.S.).

Dianthus barbatus L.

Native from the Pyrenees to the Balkan peninsula, naturalized in China and North America. Widely cultivated elsewhere.
Cuper, 3810 m. Cultivated in house garden.
clavel (Sp., 'carnation') [K111]
Flower used as table decoration (T.H., G.S.).

Paronychia chilensis DC.

Mexico to Chile.
Cuper, 3810 m. In cracks of large rock outcrop called Maranqaqa in Inca ruins.
Name and use unknown (G.S.) [D1391]

Paronychia mandoniana Rohrb.

High Andes of Peru and Bolivia.
Cuper, 4500 m. On summit of Antakillqa hill.
p'isqu sillum (Qu., *p'isqu*, 'five'; *sillum*, 'fingernail') [D1718]
Use unknown; in August, this plant has sharp bristles (G.A.).
Tauca, 4050–4250 m. Steep rocky slopes.
Name and use unknown (G.S.) [D1544]

Silene chilensis (Naudin) Bocq.

Peru and Chile.
Yanacona, 3800 m. Plant on rocks and dry pastured slopes.
Name and use unknown (B.G., Am.Q., P.P., G.S.) [K125]
Similar to *phalcha* (Qu.) (Am.Q., G.S.).
Similar to *verbena* (Sp.) (B.G.).

Silene mandonii (Rohrb.) Bocq.

High Andes of Peru and Bolivia.
Tauca, 4050–4250 m. Herb on steep rocky slopes.

Name and use unknown (G.S.) [D1542]
yawar ch'unqa (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck') [D1542]

Leaves are used as a poultice on blows and wounds, especially on the hands (B.G.).

CHENOPODIACEAE

Chenopodium ambrosioides L.

Widely distributed tropical American weed. Naturalized in Europe and North America.
Yanacona, 3800 m. Herb near building in town.
payqu (Qu.) [D1674]
Ubiquitous weed is used as a condiment (Qu., *asñapa*) in cooking (G.A., G.S.).
Cuper, 3370 m. Erect herb growing along trail on steep hillside grazed by sheep.
qhishwa pimpinilla (Qu., *qhishwa*, 'warm place'; from Sp., *pimpinela*, 'burnet,' *Sanguisorba minor*) [D1734A]
Abundant weed from the canyon; the whole plant is used to make a tea to treat stomachaches (S.J., L.P., G.S.).

Chenopodium incisum Poiret

Southwestern United States, Mexico, Peru to Argentina.
Chinchero. Fresh specimen purchased in Chinchero Sunday market.
anka payqu (Qu.) [K311]
Vendor recommended the use of this plant as tea for stomachache.

Chenopodium quinoa Willd.

Colombia to Chile and Argentina.
Pukamarka, 3800 m. Cultivated in fields bordering Lake Piuray.
quinua (Qu.) [K161, K163]
ruyaq quinua (Qu., *ruyaq*, 'white') [K163]
Both plants were being cultivated by Jose Cusihuaman. K161 was reddish in color.

The achenes of *Chenopodium quinoa* (Qu., *qinua*) contain saponins; these are washed out of the "grain" by repeated rinsing before cooking. Although both "white" (Qu., *ruyaq*) and "red" (Qu., *puka*) varieties are grown in Chinchero, they are not seen as having marked differences other than color of flowers and leaves. The leaves of both *Chenopodium quinoa* and *Chenopodium quinoa*



FIG. 20. Woman washing *quinua* (*Chenopodium quinoa*) grains (photo W.D.).

ssp. *milleanum* were said to be eaten as greens, for example in the dish called *llullu hawch'a*, consisting of potatoes, onions, and more commonly, mustard greens (*Brassica campestris*) (fig. 20).

***Chenopodium quinoa* Willd. ssp. *milleanum* (Aellen) Aellen**

Ecuador to Chile.

Cuper. 3840 m. Herb on open rock outcrop called Antasakha.

khuytu (Qu., possibly *phuytu*) [K146]

k'ita quinua (Qu., *k'ita*, 'feral') [K146]

Cooked like *llullu* (*Brassica* sp. and other greens) in *hawcha* (Qu., a meal of potatoes, greens and onions) (G.P.). The word *qinuwa* can vary to *kiyuña*.

COLUMELLIACEAE

***Columellia obovata* Ruiz & Pavón**

Peruvian Andes.

Cuper. 3600–3900 m. Shrub on hillside.



FIG. 21. G.P. assembles stalks of *huamanpito* (*Columellia obovata*) for use in basket-making (photo CCTC).

wamanpito (Qu., *waman*, 'eagle')
(L.P.) [D1685]

p'ispita (Qu.) (B.G.) [D1685]

Stems used as material for making baskets (B.G., L.P.) (figs. 21–22).

COMMELINACEAE

Commelina tuberosa L.

Mexico; Peru and Bolivia.

Cuper, 3350–3500 m. On open hillside.

sara sara (Qu., *sara*, 'maize') [D1773]

Plant has no use except as sheep fodder (B.G.). Leaves have superficial resemblance to maize seedlings.

COMPOSITAE

Ambrosia artemisioides Miller

Colombia to Bolivia.

Cuper, 3300–3810 m. Herb on floor of quebrada and in field along trail.

markhu (Qu.) [D1764, D1343]

Leaves are heated in a pot and then

rubbed on stomach for stomach pain (G.P.).

Aphanactis villosa Blake

Central and southern Peru.

Tauca, 4000–4280 m. On steep rocky slopes.

Name and use unknown (G.S.) [D1533]

coca coca (Qu.) [K224]

Use unknown (O.H.).

Aristeguetia (*Eupatorium*) *discolor* (DC.) R. King & H. Robinson

Ecuador and Peru.

Cuper, 3450–3700 m. In quebrada and along trail on hillside.

isphinhuy (Qu.) [D1452, D1473]

Used as tea to treat cough and other ailments (G.S.).

Artemisia absinthium L.

Native to Eurasia. Introduced and widely cultivated.

Q'erapata, 3800 m. Shrubby herb at edge of field.

Santa Lucia (Sp.) [D1604]



FIG. 22. G.P. uses hands and toe to begin weaving a basket (photo CCTC).

hanq'as (Qu.) (N.C., B.G.) possible name [D1604]

Unspecified use, possibly to alleviate intestinal blockages (Sp., *cólicos*) (G.S.). Used to treat twisted ankle and like problems (N.C., B.G.).

Yanacona, 3750 m. Herb from house doorway.

ahinhus (Qu., from Sp. *ajenjo*, '*Artemisia* sp.')

[F344]

Used for tea.

Baccharis boliviensis (Wedd.) Cabrera
Peru, Bolivia, and Argentina.

Cuper, 3100–3150 m. Shrub among large rocks on slope in quebrada.

piki piki (Qu., *piki*, 'flea') [K260]

Use unknown (G.P.).

Baccharis caespitosa (Ruiz & Pavón) Pers. var. *alpina* (H.B.K.) Cuatrec.

Colombia to Bolivia.

Tauca, 4050–4250 m. Low shrub on steep rocky slopes.

pampa tayanqa (Qu.) (L.H., M.H., G.S.) [D1563]

puma t'anqa (Qu.) (G.P.) possible name [D1563]

phalcha (Qu.) (G.P.) possible name [D1563]

Possibly used for foot aches (L.H.). Use forgotten (G.S.). Plant has no use (M.H., G.P.).

Cuper, alt. approx. 3900 m. Spreading, creeping herb on steep hillside at place called Unu Urphuyuq.

pampa tayanqa (Qu.) [F303B]

Plant has no use (T.L.).

Baccharis genistelloides (Lam.) Pers.

Colombia, Ecuador and Peru.

Cuper, 3500–3700 m. On steep slope.

qimsa kuchu (Qu., *qimsa*, 'three'; *kuchu*, 'corner') (C.R.) [K291]

nudo nudo (Sp., *nudo*, 'knot' or 'joint') suggested name (P.P.) [K291]

muqu muqu (Qu., *muqu*, 'knot' or 'joint') suggested name (Am.Q., G.S.) [K291]

Name and use unknown (B.G.) [K291]

Used to make drink to give to drugged people (Sp., *drogada*, by alcohol) to cure stomachache (C.R.). Plant is ground to make a medicine for (bone) dislocations (Am.Q., G.S.). Use unknown (P.P.).

Baccharis latifolia (Ruiz & Pavón) Pers.

Colombia to Argentina.

Cuper, 3800 m. Shrub along trail.

chilka (Qu.) [D1431]

Use unknown (G.P., G.S.).

Baccharis serrulata Pers.

Peru, Bolivia and Argentina.

Cuper, 3800 m. Shrub in houseyard, not cultivated.

suytu suytu qhura (Qu., *suytu*, 'long and pointed'; *qhura*, 'herb') [K204]

No use reported (G.P.).

Baccharis tricuneata (L.f.) Pers. var. **robusta** Cuatrec.

Peruvian Andes.

Tauca, 4050–4250 m. Shrub on steep rocky slopes.

tayanqa (Qu.) [D1521]

Plant is ground for salve to treat (bone) dislocations, and used for firewood (G.S.).

Baccharis aff. **tricuneata** (L.f.) Pers. (sterile specimen)

Peruvian Andes.

Cuper, alt. approx. 3900 m. Shrub on steep hillside at place called Unu Urphuyqu.

tayanqa (Qu.) [F303A]

Leaves compared to those of *pampa tayanqa* (F303B) (T.L.).

Barnadesia berberoides Schultz-Bip. (vel aff.)

Cuper, 3700–3810 m. Shrub on large eroded rock and on terrace edges in Inca ruins, and on steep hillside.

llawlli (Qu.) [D1375, D1422, F358]

hallu hallu (Qu.) alternate pronunciation (G.P.) [D1422]

The leaves are chewed like coca or made into tea (N.C.). The plant is used to treat *escarlatina* (Sp., 'scarlet fever') (U.I.). Use unknown (M.C., S.J., T.L., G.S.). G.P. corroborated the name but said that the plant had no use. The bright magenta color of the flowers of this plant is called *llawlli*

in describing dyed yarn and other artifacts.

Cuper. Woody shrub on lower slope of Antakillqa hillside at place called Tasakuranaladunpi.

ruyaq llawlli (Qu., *ruyaq*, 'white') [F289]

Plant has no use (T.L.). Plant has white flowers.

Bidens andicola H.B.K.

Colombia to Argentina.

Cuper, 3600 m. Steep shrubby hillside grazed by sheep.

qhishwa kiku (Qu., *qhishwa*, 'warm place') (G.S.) [D1732]

kiku (Qu.) (S.J.) [D1732]

Possible use as dye (G.S.). Eaten by cattle (S.J.). Small leaves indicate that plant came from area lower than Chinchero center (S.J.).

Qorikancha, 3700 m. Fallow field in open area along paved road.

kiku (Qu.) [F342B]

Use unknown (G.S.).

Bidens andicola H.B.K. var. **andicola**

Colombia to Argentina.

Cuper, 3450–3810 m. Along trail, and on lightly grazed steep slope at edge of potato garden.

hembra kiku (Qu. from Sp., *hembra*, 'female') (G.P.) [D1347]

kiku (Qu.) (G.P.) [D1502]

p'irqa (Qu.) (G.S.) [D1347, D1502]

Made into tea to treat pneumonia (D1502) (G.S.). Flowers provide a yellow dye; plant is the female (Sp., *hembra*) counterpart of D1346 (G.P.). At different times, G.P. identified D1502 as *p'irqa* and as a *kiku* of unknown use.

Qorikancha, 3700 m. Fallow field in open area along paved road.

kiku (Qu.) [F341A]

Use unknown (G.S.).

Bidens andicola H.B.K. var. **descomposita** Kuntze

Colombia to Argentina.

Cuper, 3810 m. Herb along trail.

macho kiku (Qu. from Sp., *macho*, 'male') (G.P., G.S.) [D1346]

Flowers provide a yellow dye; plant is the male (Sp., *macho*) counterpart of D1347, and provides a more potent dye (G.P.) (fig. 23).



FIG. 23. N.C. gathers the flowers of *kiku* (*Bidens andicola* ssp.) to use for a yellow dye (photo CCTC).

Qorikancha, 3700 m. Fallow field in open area along paved road.

kiku (Qu.) [F341B, F343]

Use unknown (G.S.).

***Bidens pilosa* L.**

Neotropical.

Cuper Alto, 3800 m. Common herb on stone wall along trail.

silk'iwa (Qu.) [F339]

Use unknown (G.S.).

Qorikancha, 3700 m. Fallow field in open area along paved road.

kiku (Qu.) [F342A]

Use unknown (G.S.).

***Calendula officinalis* L.**

Native to Mediterranean region. Widely cultivated.

Cuper, 3810 m. Cultivated in house garden.

uchu k'aspa (Qu.) (T.H., G.S.) [K107]

Flower used as decoration. Made into tea

which is drunk to treat excessive menstrual bleeding or bleeding outside of period (G.S.).

Chuquiraga spinosa Less.

Southern Peru, Chile, Argentina.

Cuper, approx. 4200 m. Low shrub on steep hillside of Antakillqa at place called Atuq Pita.

uchu k'aspa llawllicha (Qu., *uchu k'aspa*, 'Calendula officinalis') (S.J.) [F276]

qhillu t'ikaq llawlli (Qu., *qhillu*, 'yellow'; *t'ikaq*, 'flowered') (G.S.) [F276]

The plant has no use (S.J., G.S.). Flowers of plant are light orange.

Cirsium vulgare (Savi) Ten.

Native to Europe. Naturalized weed.

Cuper, 3600 m. Herb on hillside (D1427).

Qorimarka, Sipas Warquna ruins, 3750 m.

Herb in disturbed soil (K281).

estrella khishqa (Sp., *estrella*, 'star'; Qu., *khishqa*, 'spiny plant') (Am.Q., G.P.) [D1427, K281]

alka khishqa (Qu., *alka*, 'mark' or 'stain') suggested name (Am.Q.) [K281]

escobilla (Sp., 'little broom') (B.G., S.J., C.R.) [K281]

Name unknown (P.P.) [K281]

Plant has no name (G.S.) [D1427]

Plant appeared like a plague in Chinchero about eight years ago [1974], and people are pretty tired of it already, since it has a lot of spines and is of no use whatsoever (Am.Q., G.S.). To help cure nose ailments, such as bleeding or small sores inside nose, four to six flowers are soaked in clean water, then smelled in the morning (P.P.). Other suggested uses as a tea-sel (S.J., C.R.), and, taken as a tea, to sterilize women (Am.Q.). Use unknown (G.P.).

Conyza canadensis (L.) Cronq.

Cosmopolitan weed.

Cuper, 3330 m. Herb in old rocky field by brook.

duraznillo (Sp., 'small peach') suggested name [D1820]

Used as tea to treat hangovers after having drunk *trago* (Sp., 'cane alcohol') (B.G.).

Conyza deserticola Philippi

Peru to Chile and Argentina.

Taucca, 4050–4250 m. Steep rocky slopes.

Name and use unknown (G.A., G.S.) [D1539]

Cuper, 4500 m. Summit of hill.

pampa sutuma (Qu.) [D1719]

Use unknown (L.P.).

Conyza obtusa H.B.K.

Mexico to northern Argentina.

Q'erapata, 3800 m. Herb in old field near Ashñapuquio spring.

Name and use unknown [D1615]

Similar to *maych'a* (Qu.); sheep eat it, along with everything else (N.C., B.G.).

Conyza primulaefolia (Lam.) Cuatr. & Lourteig

Mexico to Chile and Argentina

Taucca, 4050–4250 m. Steep rocky slopes.

Name and use unknown [D1529]

Cosmos peucedanifolius Wedd.

Peru, Bolivia and Argentina.

Cuper, 3500–3600 m. Herb among rocks, grass, and shrubs on steep slopes.

phanti (Qu.) (N.C., B.G., G.P.) [D1669]

Entire plant used for tea; root used for fever of *costado* (Sp., 'side') (G.P.). Sold for tea in Cuzco and Chinchero markets.

Dahlia pinnata Cav.

Native to Mexico. Widely cultivated and escaped.

Cuper, 3300 m. At edge of cornfield in quebrada bottom.

puka t'ika (Qu., *puka*, 'red'; *t'ika*, 'flower') (G.P.) [D1763]

Used for decorative purposes during rituals such as the first hoeing of potato fields in January or February (G.P.). Women wear the flowers in their hats, and then plant them in the form of a cross between the rows of potatoes. Bouquets of flowers are then given to everyone present, and flowers are exchanged between partners who dance at the field. Bouquets are selected to mix the greatest possible contrast of flower colors; the *puka t'ika* is especially valued for its deep red color and large size. Roasted guinea pigs (Qu., *cui*) must be eaten and maize beer (Sp., *chicha*) drunk to ensure a harvest of many large potatoes.

Eupatorium cuzcoense Hieron.

Southern Peru.

Tauca, 4050 m. Shrub in thickets along road.
hayaq maych'a (Qu., *hayaq*, 'bitter' or 'stinging') (G.S.) [D1587]
maych'a (Qu.) (M.H.) [D1587]

Plant has no use, although llamas and cows eat it (M.H.). Use unknown (G.S.). *Maych'a* are common, weedy plants, and so, for instance, a very ordinary curer is called a *maych'a paqu* (Qu., *paqu*, 'healer'), which could imply that he could be found anywhere, or that he only uses ordinary weeds in curing.

Eupatorium pentlandianum DC.

Peru and Bolivia.

Cuper, 3450–3550 m. Steep rocky slopes and rocks along stream above waterfall.
hayaq maych'a (Qu., *hayaq*, 'bitter' or 'stinging') [D1472]
hayaq qiyuña (Qu.) alternate name (G.P.) [D1472]

Used to rub on breasts to wean children after age two years (G.P.). Use unknown (G.S.).

Eupatorium sternbergianum DC.

Ecuador and Peru.

Cuper, 3700 m. Shrub along trail.
manka paki (Qu., *manka*, 'pot'; *paki*, 'to break') [D1413]

Used as a tea for digestive ailments (G.S.). All informants agreed that although the name of this plant, 'pot-breaker,' might have referred to its use in the past, they knew of no such use.

Eupatorium volkensii Hieron.

Southern Peru.

Cuper, 3700 m. Shrub along trail.
suytu qhura (Qu., *suytu*, 'long and narrow'; *qhura*, 'herb') [D1414]
Name and use unknown (G.S.) [D1414]
Use unknown (G.P.).

Flourensia polycephala Dillon

Southern Peru.

Urquillos, 3300 m. Woody shrub along road at place called Erapata.
fawka (Qu.?) [F329]

Useful as firewood, as it can be used for cooking fires even when green. Leaves used to make a poultice for sprains.

Galinsoga mandonii Schultz-Bip.

Peru, Bolivia and Argentina.

Rajchi, 3700 m. Herb in barley field below Inca ruins.
uq'i qhura (Qu., *uq'i*, 'gray'; *qhura*, 'herb') (Am.Q.) [K217]
qhuracha (Qu., 'little herb') (B.G.) [K217]
Name unknown (P.P.) [K217]
Use unknown (B.G., Am.Q., P.P.).

Galinsoga quadriradiata Ruiz & Pavón

Native to Mexico. Weedy in temperate and subtropical regions of both hemispheres.

Cuper, 3300–3450 m. Herb at edge of small maize field along brook.
p'irqa (Qu.) [D1744]
Entire plant used as a tea to cure coughs (S.J.).

Gamochaeta spicata (Lam.) Cabrera

Native to South America, now a cosmopolitan weed.

Cuper, 3600–4500 m. Herb in moist fen (D1408) and on summit of Antakillqa hill (D1711, D1712).

Tauca, 4050–4250 m. Herb on steep rocky slopes (D1562).

qhitu qhitu (Qu.) (G.A., N.C., L.H., G.P., L.P., G.S.) [D1408, D1562, D1711, D1712]

macho qhitu qhitu (Sp., *macho*, 'male') (G.A., L.P.) [D1711]

hembra qhitu qhitu (Sp., *hembra*, 'female') (G.A.) [D1712]

The root is drunk in a tonic (local Sp., *fresco*) with *yawar ch'unqa* (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck') (N.C.).

The entire plant is ground in alcohol and applied to the leg to relieve leg cramps (G.P.). Used together with lupine and *isphinhuy* (Qu.) in a poultice which is rubbed on the surface of the legs (G.P.). A tea for the *costado* (Sp., 'side') is made from the whole male plant (G.A.). The male form is said to grow into the female form (L.P.), which is made into *sankhu* (Qu., a meal) with flour of *Vicia faba*, or can be taken as a tea for lung problems (G.A.). Use unknown (L.H.).

Gnaphalium cheiranthifolium Lam.

Southern South America.

- Cuper, 3750 m. Herb in old field along brook.
wila wila pasto (Qu.; Sp., *pasto*, 'forage') [K120]
 Use unknown (G.S.).
- Gnaphalium mandonii** Schultz-Bip.
 Southern Peru and Bolivia.
 Cuper, 3450–3550 m. Herb along creek in quebrada above waterfall.
qhitu qhitu (Qu.) (B.G., G.P.) [D1474]
 A lukewarm tea made from this plant is good for the lungs (B.G.). Eaten by sheep (B.G.).
- Taucca, 4050 m. Herb in moist soil along brook.
wila wila (Qu., *wila*, 'tell') (G.S.) [D1575]
qiswar qiswar quracha (Qu., *qiswar*, 'Buddleja spp.'; *qura*, 'herb') (M.H.) [D1575]
 Use unknown (G.S.). Plant has no use, except as sheep fodder (M.H.).
- Grindelia boliviana** Rusby
 Peru, Bolivia and Argentina.
 Qorikancha, 3750 m. Herb in disturbed soil.
chiri chiri (Qu., *chiri*, 'cold') [K280]
 Use unknown (T.H., G.P.).
- Heliopsis buphthalmoides** (Jacq.) Dunal
 Neotropical weed.
 Cuper, 3300–3450 m. At edge of garden along brook.
p'irqa (Qu.) [D1745]
 Used as a tea to cure coughs (S.J.).
- Hieracium chilense** Less. (vel sp. aff.)
 Ecuador, Chile, Peru.
 Cuper, alt. unknown. Antakillqa hillside.
 Name and use unknown [F271]
- Hieracium mandonii** (Schultz-Bip.) Arv.-Touv.
 Peru, Bolivia and Argentina.
 Taucca, 4050–4250 m. Steep rocky slopes.
yerba de billarga (Sp., *yerba*, 'herb') (M.T.) [D1550]
 Plant has no name (G.S.) [D1550]
 Cuper, 3600–3900 m. Hillside.
wila wila (Qu.) (L.P.) [D1690]
suphu suphucha (Qu., *suphu*, 'coarse stiff hair') (B.G.) [D1690]
 This plant was declared to be of no use by all informants (B.G., L.P., G.S., M.T.). G.S. noted emphatically that the plant had no name or use and was not even eaten by animals.
- Hypochoeris chilensis** (H.B.K.) Hieron.
 Colombia to Argentina.
 Cuper, 3100–3600 m. Steep rocky slopes.
qhishwa pilli (Qu., *qhishwa*, 'warm place'; *pilli* refers to the form in which the ray florets radiate from a central ring, as feathers do from a headdress) (G.P.) [K264]
 Name and use unknown (N.C., B.G.) [D1656]
 Use unknown (G.P.).
- Hypochoeris taraxacoides** (Walp.) Benth. & Hook.
 Peru to Argentina.
 Cuper, 3600–4500 m. Along trail and on summit of Antakillqa hill.
 Taucca, 4050 m. Moist soil along brook.
 Yanacona, 3750 m. Fallow field on moist pampa.
ch'aran pilli (Qu., *ch'aran*, 'seepage area'; *pilli* refers to the form in which ray florets radiate from a central ring, as feathers do from a headdress) [D1407, D1574, D1589, D1629, D1708]
pilli pilli (Qu.) alternate name (G.A.) [D1708]
 A tea (B.G.) for stomach problems is made from the root of this plant (G.A., M.H.). A tonic (Sp., *refresco*) (M.H.) is made from the fresh leaves (G.S.) or the entire plant with the root (G.A.). Used for pains of the waist area (L.P.). Use unknown (G.P.). All six informants agreed on the name.
- Hypochoeris** sp.
 Steep rocky slopes.
ch'aki pilli (Qu., *ch'aki*, 'dry'; *pilli* refers to the form in which the ray florets radiate from a central ring, as feathers do from a headdress) not collected
 No reported use (L.H.).
- Jungia amphistipula** Cerrate
 Peruvian Andes.
 Cuper, 3500–3600 m. Steep rocky slopes.
 Name and use not recorded [D1672]
- Leucanthemum vulgare** Lam.
 Native to Eastern Europe. Widely cultivated and escaped.
 Cuper, 3330 m. Wild herb on steep wet rock slopes.

margaritas (Sp.) [D1808]
Ornamental (B.G.).

Matricaria recutita L.

Native of Eurasia. Widely cultivated.

Cuper, 3810 m. Herb cultivated in house garden.

manzanilla (Sp., 'chamomile') (N.C., A.Co., G.S.) [D1397]

Used for tea as remedy for stomachache or other ailments (N.C.). Used with *toronjil* (Sp., '*Melissa officinalis*') in making *frutillada* ('strawberry beer') (N.C.). Plant has no Quechua name. Sold in Chinchero Sunday market.

Munnozia lyrata (Gray) H. Robinson & Brettell
Peru.

Cuper, 3370–3700 m. In open areas along steep trail.

khana (Qu.) [D1418]

Name and use not recorded [D1735]

Name unknown (G.P.).

Mutisia acuminata Ruiz & Pavón

Peru, Bolivia and Argentina.

Cuper, 3700 m. Along trail.

chinchirkuma (Qu.) [D1419]

Use unknown (G.P.).

Mutisia cochabambensis Hieron.

Peru and Bolivia.

Cuper, 3500–3900 m. Climbing vine at edge of field on steep hillside.

wayrakuma (Qu., *wayra*, 'wind') (L.P.) [D1688]

Name and use unknown (G.P.) [K288]

One informant (L.P.) told us that he makes a tea from the leaves of this plant and drinks it every day for his general health.

Onoseris albicans (D. Don) Ferreyra

Peru.

Pirqa Kachun, 3000–3300 m. On dry hillside.
wira q'uyá (Qu.) (P.P.) [K301]

puna san borgue (Qu.-Sp., 'St. Borja of the puna') (C.R.) alternate name [K301]

phanti phanti or *k'ita phanti* (Qu., *k'ita*, 'wild') (U.I.) possible name [K301]

Name and use unknown (B.G.) [K301]

Wira q'uya is burned inside the sheep corral with *ch'ira de ají* (Qu., *ch'ira*, 'seeds'; Sp., *de ají*, 'of hot peppers'); the smoke is said to prevent sheep from running too much (P.P.). *Wira*

q'uya is burned along with alpaca fat in *despacho* (Sp.) ceremonies to dismiss fright or trauma (L.P.). Use unknown (C.R.).

Oritrophium hieracioides (Wedd.) Cuatrec.

Peru and Bolivia.

Tauca, 4000–4250 m. Herb on cliff faces, steep rocky slopes, and lightly grazed draws.

Name and use unknown (G.S.) [D1529, K184]

Paranephelium uniflorum Poeppig & Endl.

Peru.

Yanacona, 3750 m. Herb in fallow field on seasonally inundated pampa (D1620).

Cuper, 4500 m. Herb on summit of hill (D1724).

pachakuti (Qu., *pacha*, 'earth'; *kuti*, 'turn around') (G.A., G.P., G.S.) [D1620, D1724]

Tauca, 4050–4250 m. On steep rocky slopes, and in moist soil along brook in community center.

q'ara maransiras (Qu., *q'ara*, 'skin') (G.S.) [D1537]

q'ara pilli (Qu., *q'ara*, 'skin'; *pilli* refers to the form in which the ray florets radiate from a central ring, as feathers do from a headdress) (G.S.) [D1577]

Use unknown (G.A., L.H., G.S.).

Perezia coerulescens Wedd.

Peru, Bolivia and Argentina.

Tauca, 4000–4200 m. Herb on cliff faces and lightly grazed draws.

Name and use unknown (G.S.) [K187]

Perezia multiflora (H.B.K.) Less.

Colombia to Argentina.

Tauca, 3900 m. Herb on side of trail.

Name and use unknown (G.S.) [K180]

Perezia pinnatifida (Humb. & Bonpl.) Wedd.

Ecuador to Bolivia.

Cuper, 4500 m. Summit of Antakillqa hill.

Tauca, 4200–4500 m. Among *ichus* (Qu., 'high-altitude grasses') in puna above community.

sutuma (Qu.) [D1703, F369]

Informants disagreed about the gender of this plant. L.P. identified it as female (Sp., *hembra*), noting that the roots, leaves, and flowers are boiled to make a tea for stomach ailments. G.A.

called it male (Qu., *urquña*) and said that a tea is made from the whole plant for coughs. B.G. gave it no gender and said that only the root is used to treat *fiebre del costado* (Sp., 'fever of the side'). Use unknown (*F369*) (G.S.). The plant is sold by local vendors in the Chinchero Sunday market.

***Perezia pungens* (Humb. & Bonpl.) Less.**

Colombia to Bolivia.

Cuper, 3500–3900 m. Herb on steep rocky slopes of Antakillqa hillside.

sutuma (Qu.) [*D1648*, *D1693*, *K285*]

This plant (*D1648*, *D1693*) is male (Sp., *macho*; Qu., *urquña*) (G.P., L.P.). The leaves and flowers are used for tea (G.P.); the large root is used to make a tea for fever (L.P.). The leaves are used in the same way as *manzanilla* (Sp., '*Matricaria recutita*') in tea, or as a tonic (Sp., *refresco*). It is taken as a tea, for breakfast (N.C., B.G.) and for ailments of the stomach and the side (G.P., L.P., C.R.). Similar to *yerba de billarga* (Sp.?) (B.G.).

***Schkuhria pinnata* (Lam.) Kuntze**

Peru, Chile, Argentina, Colombia, Ecuador, Bolivia.

Uychu, approx. 3600 m. Erect herb at place called Suntur Muqu, next to road and river.

kanchalawa (Qu.) [*F322*]

For use to treat excessive sleeping, boil the plant in the evening, then give it to children in the morning (G.S.). When boiled, the water becomes very bitter, so that one has to add a lot of sugar to get children to drink it (G.S.).

***Senecio calcensis* Cabrera & Zardini**

Peru.

Cuper, 3350–3550 m. Herb on hillside (*D1770*) and steep bank in quebrada above Puqupuq waterfall (*D1481*)

ambrosacha (Qu., from Sp. *ambrosia*) (G.P.) [*D1770*]

suka rura (Qu.) (G.P.) [*D1481*]

Name and use unknown (G.S.) [*D1481*]

Use unknown for either specimen (G.P.).

***Senecio erosus* Wedd.**

Peru and Bolivia.

Taucca, 4000–4200 m. On side of cliff.

tiqllay warmi (Qu., *warmi*, 'woman')

[*K195*]

Drunk in tea to treat pain in the kidneys (G.S.). Sold by local vendors in the Chinchero Sunday market.

***Senecio herrerae* Cabrera**

Peru and Bolivia.

Ch'usu, 3800 m. Herb in disturbed soil along trail (*K273*).

Cuper village center, 3810 m. On stone wall near spring (*K110*).

q'armatu (Qu.) (U.I.) [*K273*]

paya paya (Qu., *paya*, 'little old lady') suggested name (G.S.) [*K110*]

china china (Qu., *china*, 'female') suggested name (C.R.) [*K110*]

Use unknown (U.I., G.S., C.R.).

***Senecio modestus* Wedd.**

Peru and Bolivia.

Taucca, 4000–4200 m. Herb on cliff face.

qhitu qhitu (Qu.) (B.G.) [*K186*]

Name and use unknown (G.S.) [*K186*]

Use unknown (B.G.).

***Senecio parvocapitatus* Cabrera**

Southern Peru.

Cuper, 3810 m. Along trailside.

llamaq mikhuna maych'a (Qu., *llamaq*, 'llama's'; *mikhuna*, 'food') [*D1354*]

Eaten by llamas, burros, and sheep; boiled and rubbed on the body for aches (G.P.).

***Senecio rudbeckiifolius* Meyen & Walp.**

Peru and Bolivia.

Cuper, 3700 m. Antakillqa hillside.

llamaq mikhuna maych'a (Qu., *llamaq*, 'llama's'; *mikhuna*, 'food') [*D1428*]

hayaq maych'a (Qu., *hayaq*, 'bitter' or 'stinging') (G.S.) [*D1428*]

Used for llama food (G.P.).

Q'erapata, 3800 m. Shrub on top of adobe wall.

hayaq maych'a (Qu., *hayaq*, 'bitter' or 'stinging') [*D1606*]

puka tulluq maych'a (Qu., *puka*, 'red'; *tulluq*, 'stemmed') (N.C., B.G.) [*D1606*]

For use to cure dislocations, plant is ground to extract juice that is rubbed

on affected part or tied on with a rag
(N.C., B.G., G.S.).

Senecio spinosus DC.

Peru, Bolivia and Argentina.

Tauca, 3900–4500 m. Shrub in open on
grazed slopes below cliff faces and in flat
area of cold puna.

k'anlli (Qu.) [K181]

Name and use unknown [F307]

Use unknown (B.G., T.H.). Possible use
of whole plant in warm water for
headache (B.G.). Similar to *k'anlli*
(F307) (Je.C., G.S.).

Sigesbeckia jorullensis H.B.K.

Pantropical weed.

Cuper, 3300–3750 m. At edge of old field along
brook.

asñaq qhura (Qu., *asñaq*, 'smelly'; *qhura*,
'herb') (Am.Q., G.S.) [K116]

khanan khanan qhura (Qu., *qhura*, 'herb')
(B.G.) [K116]

uq'i qhura (Qu., *uq'i*, 'gray'; *qhura*, 'herb')
possible name (P.P.) [K116]

manka p'aki (Qu.) possible name
(P.P.) [K116]

Name unknown (S.J.) [D1748]

The plant is collected and fed to guinea
pigs (Qu., *cuí*) (B.G., S.J., Am.Q.,
P.P., G.S.).

Sonchus asper (L.) Hill

Cosmopolitan weed, native of Europe.

Yanacona, 3750 m. On edge of potato garden
on pampa.

Cuper, 3100–3150 m. On somewhat dry slope
with large rocks.

khishqa khana (Qu., *khishqa*, 'plant with
spines') (B.G., G.P.) [D1641, K265]

Whole plant is used in a tea (N.C., B.G.)
with tonic (Sp., *fresco*) effects (S.J.).
Use unknown (G.P.).

Sonchus oleraceus L.

Cosmopolitan weed, native of Europe.

Cuper, 3450–3550 m. Along stream in que-
brada above Puqupuq waterfall.

llampu khana (Qu.) (G.S., G.P.) [D1492]

upa khisa (Qu., *upa*, 'mute'; *khisa*, 'thorn')
suggested alternate name (G.S.)
[D1492]

Entire plant used to make juice to drink
(G.P.). Use unknown (G.S.).

Stevia macbridei B. L. Robinson var. **anomala** B.
L. Robinson

Peru.

Yanacona, 3800 m. Herb among rocks on dry
pastured slopes.

pata kaqra (Qu.) [K126]

Name and use unknown (Am.Q., P.P.,
G.S.) [K126]

Used only as kindling and fuel for kitchen
fires (B.G.). Animals will not eat it
because of its foul odor (P.P.) (fig.
24).

Stevia rhombifolia H.B.K. var. **stephanacoma**
Schultz-Bip.

Colombia to Bolivia.

Cuper, 3100 m. Herb in moist maize garden.
manka p'aki (Qu., *manka*, 'pot'; *p'aki*,
'break') (B.G., Am.Q., G.S.) [K251]

p'irqa (Qu.) (P.P.) [K251]

Roots used for stomachache; leaves
steeped in a tea as a remedy for vom-
iting (Am.Q., G.S.). Used as a tea
(P.P.).

Tagetes multiflora H.B.K.

Colombia to Argentina.

Q'erapata, 3800 m. Weedy herb at edge of
field along road.

chichipa (Qu.) [D1608]

A condiment for cooking (*asñaapa*, Qu.,
'having smell') (G.S.). Used to treat
stomachache (B.G.). Sold in Chinch-
ero Sunday market, but less desir-
able than *wakatay* (*Tagetes terni-*
flora) or other condiments.

Qorikancha, 3700 m. Fallow field along paved
road.

Name and use unknown [F342C]

Tagetes terniflora H.B.K.

Colombia to Argentina.

Cuper, 3810 m. Cultivated in house garden.
wakatay (Qu.) (T.H., G.S.) [K100]

Condiment used in cooking, especially to
stuff guinea pigs before roasting and
in maize soup (G.S.). Sold in
Chinchero and Cuzco markets.

Tanacetum parthenium (L.) Schultz-Bip.

Native to the Balkan Peninsula. Widely cul-
tivated.

Cuper, 3810 m. Herb cultivated in house gar-
den.

santa mayra (local Sp., Santa Maria) (T.H.,
G.S.) [K103]



FIG. 24. Children carry kindling after a day with flocks or in fields, never going home empty-handed. Guinea pig droppings are the primary fuel in homes that have not yet converted to kerosene stoves, but all homes maintain supplies of dried brush to start and enliven cooking fires (photo C.S.).

Used for intestinal obstruction (Sp., *cólicos*) and *desmantu* (Qu. from Sp., *desmandado*), described as waist-level backache from exhaustion (G.S.).

Taraxacum officinale G. Weber ex Wiggers
Cosmopolitan weed.

Cuper, 3810 m. Weedy herb along trail.
charanpilli (Qu., *charan*, 'wet place'; *pilli* refers to the form in which the ray flo-

rets radiate from a central ring, as feathers do from a headdress) [D1371]

Roots used for a tea to treat ailments of *inflamación* (Sp., 'inflammation'), *corazón* (Sp., 'heart'), and *mal de hígado* (Sp., 'liver problems') (G.P.).

Verbesina pflanzii Perkins
Peru and Bolivia.

- Pirqa Kachun, 3000–3300 m. Abundant herb along trail on dry hillside.
Name and use unknown (B.G., Am.Q., P.P., G.S.) [K298]
winku winku (Qu.) possible name (C.R.) [K298]
Use unknown (B.G., Am.Q., P.P., C.R., G.S.). Similar to *sunchu* (Am.Q., G.S.).
- Viguiera pazensis** Rusby
Peru and Bolivia.
Cuper, 3450–3500 m. At edge of potato field on lightly grazed slopes above waterfall.
sunch'u (Sp., *sunchu*, 'Composite sp.') [D1498]
Used as fodder for cows and guinea pigs (Qu., *cui*) (G.S.).
- Viguiera procumbens** (Pers.) S.F. Blake
Peru, Bolivia, Argentina, Chile.
Cuper, 3100 m. On side of trail.
sunch'u (Sp., *sunchu*, 'Composite sp.') [K248]
Use unknown (G.P.).
Yanacona, 3800 m. Herb near buildings.
sunchus (from Sp., *sunchu*, 'Composite sp.'; pronunciation varies to *sunchu*) (G.A., G.S.) [D1675]
manka paki (Qu., *manka*, 'pot'; *paki*, 'break') (N.C., B.G.) [D1675]
Leaves are fed to guinea pigs (G.A., G.S.).
Use unknown (N.C., B.G.).
- Vilobia praetermissa** Strother
Peru and Bolivia.
Cuper (Huanacapa), 3850 m. Herb in grazed and disturbed soil along trail.
pampa anis (Qu., *pampa*, 'flat open place'; Sp., *anis*, 'anise') [K176]
Leaves can be used to make a tea (G.P.).
After eating something cold in the countryside, people sometimes chew this sweet plant as they do coca (T.H.). Sold in the Chinchero Sunday market.
- Werneria nubigenia** H.B.K.
Mexico, Guatemala, Andean South America.
Cuper, 3600–3900 m. Low herbs in clumps on open hillside of arable land in place called K'inqupata.
cebolla cebolla [F353]
Plant has no use (M.C., S.J., T.L., G.S.).
Plant may be biennial (G.S.).
- Werneria pygmaea** Gillies
Tauca, 5000 m. Community border with Calca. Among *ichus* on open puna.
margaritas (Sp., 'daisies') [of some kind] suggested name [F363]
Plant has no use (E.C., Au.Q., G.S., J.S.).
- Werneria staticaefolia** Schultz-Bip.
Peru.
Tauca, 4050–4250 m. Steep rocky slopes.
cebolla cebolla (Qu., from Sp. *cebolla*, 'onion') [D1547]
Name and use unknown (G.S.) [D1547]
Use unknown (L.H.).
- Werneria strigosissima** A. Gray
Cuper Alto, 4600 m. Among *ichus* (Qu., 'high-altitude grasses') in flat open area called Margaritayuq.
Name and use unknown [F315]
- Werneria villosa** A. Gray
Peru and probably adjacent Bolivia.
Tauca, 5000 m. Community border with Calca. Among *ichus* (Qu., 'high-altitude grasses') on open puna.
margaritas [of some kind] (Sp., 'daisies') [F364]
Name and use unknown [F365]
Use unknown [F364] (E.C., Au.Q., G.S., J.S.). All said that F365 was a plant they had never seen before (E.C., Au.Q., G.S., J.S.).
- Zinnia peruviana** (L.) L.
Native of Mexico. Neotropical weed.
Pirqa Kachun, 3000–3300 m. Herb along trail on dry hillside.
yuyay hapichinkiy t'ika (Qu., 'thought flower') [K306]
mayu yawar ch'unqa (Qu.) suggested name (C.R.) [K306]
puka t'ika qhurachata (Qu.) possible name (B.G.) [K306]
qhishwa aya t'ika (Qu.) possible name (B.G.) [K306]
Name and use unknown (P.P.) [K306]
Use unknown (B.G., Am.Q., C.R., G.S.).
The Quechua name is a literal translation of *pensamiento* (Sp., 'thought'), as zinnias are locally called in Spanish. The informant may have improvised the Quechua name when asked.

Genus and species indet.

Cuper, 3600–3900 m. Herb on Antakillqa hillside.

maransiras (Qu.) [D1697]

Greens are used as herb in salads and soups or can be ground into hot sauce. This is a favorite food of the informant (L.P.). Sold by local vendors in the Chinchero Sunday market.

Genus and species indet.

Cuper, 4500 m. Herb at summit of Antakillqa hillside, place called Kuntur Tiana.

maransiras (Qu.) [F275]

Said never to flower. Whole plant is ground up to be eaten in hot sauce (Qu., *uchukuta*), or in freeze-dried potato soup (Qu., *chuñu lawa*) made with *saqtacha* (Qu., *chuñu* which is chopped up and boiled in processing.) Smells like *cilantro*.

CONVOLVULACEAE

Cuscuta corymbosa Ruiz & Pavón

Central and southern Peru.

Cuper, 3600–3900 m. Parasitic vine on shrubs on hillside.

willq'u (Qu.) [D1682]

Name and use unknown (G.A., B.G.) [D1682]

Informant (L.P.) insisted that this offensive-tasting plant had no use whatsoever.

Cuscuta globiflora Engelm.

Southern Peru to Argentina.

Cuper, 3100 m. Parasitic vine climbing on herbs in small moist maize field.

willk'u rojo (Qu.; Sp., *rojo*, 'red') (P.P.) [K247]

willk'u (Qu.) (B.G.) [K247]

Useful to treat kidney ailments (P.P.). The whole plant is 'toasted' (heated without water) and used as a poultice for pains in the waist area (P.P.). Considered a very hot plant (P.P.). Like *allka khishqa* and *ruda*, which cause abortion, this plant can be used to make a tea to make women sterile (Am.Q., G.S.).

Dichondra sericea Sw.

Mexico to Costa Rica, Ecuador, Peru, Brazil, Argentina and Chile.

Q'era-pata, 3800 m. Creeping herb forming mats in moist seepage area.

winku winku (Qu.) [D1613]

A tea prepared by steeping the leaves is drunk to cure kidney problems (N.C., B.G., G.S.).

Ipomoea minuta R. E. Fries

Peru and Bolivia.

Pirqa Kachun, 3750 m. On open grazed hillside.

leche leche (Qu. from Sp., *leche*, 'milk') [K295]

ñuñupunqa (Qu., *ñuñu*, 'breast') possible name (C.R.) [K295]

Sweet tuber is eaten, especially by children (U.I.).

Ipomoea piurensis O'Don.

Guyana, Venezuela, Brazil, Ecuador and Peru.

Cuper, 3300 m. Vine on stone wall at edge of small maize field.

wilk'u (Qu.) [D1759]

Use unknown (G.P.).

CRASSULACEAE

Echeveria aff. *chiclensis* (Ball) Berger (or sp. nov.)

Pirqa Kachun, 3000–3300 m. Erect succulent on Inca stone wall.

luraypu (Qu., 'diamond shape') [K296]

Use unknown (S.J., C.R., G.S.).

Echeveria aff. *peruviana* Meyen

Southern Peru to Chile and Argentina.

Cuper, 3700 m. Succulent herb along trail.

luraypu (Qu., 'diamond shape') [D1415]

Leaves chewed to alleviate thirst (S.J., G.S.).

Villadia virgata (Diels) Baehni & J.F. Macbr.

Central and southern Peru.

Cuper, 3330–3600 m. Herb on steep wet rocks and on rocks in place called Wayraq Punku.

Name and use unknown [F263]

Name and use not recorded [D1811]

Pirqa Kachun, 3000–3330 m. Erect on Inca wall.

kunquña (Qu.) (Am.Q., P.P., G.S.) [K297]

kuychi kuychi (Qu.) (C.R.) [K297]

To treat a headache, this plant is boiled in an *olla* (Sp., 'globular cooking pot') and used to wash the head (P.P.).

Head problems may be caused by the wind; for instance if your ears ring, washing with this plant will make it stop (P.P.). The juice squeezed out after rubbing this plant can be used to treat toothaches (Am.Q., G.S.). Plant has no use (C.R.).

CRUCIFERAE

Brassica aff. B. nigra (L.) W.D. Koch or **B. juncea** (L.) Czern.

Both native of Old World.

Cuper, 3450–3500 m. Herb on lightly grazed slopes above waterfall.

mostaza (Sp., 'mustard') [D1500]

Seeds are ground for use as a condiment (G.S.). G.S. later denied that use, but suggested that the fruit are used to cure fever.

Brassica campestris L.

Native of Old World.

Cuper, 3810 m. Common herb by trailside.

nabo (Sp., 'turnip') [D1341]

llullu (Qu., 'greens') [D1341]

urqun sangra sangra (Qu., *urqun*, 'male') (T.L.) [F298]

Cooked as a green in *llullu hawch'a* (Qu.), a dish of greens, onions, and mashed potatoes. Use unknown (T.L.).

Capsella bursa-pastoris (L.) Medikus

Native of Old World, now a widespread American weed.

Cuper, 3810 m. Herb along trail.

uq'i uq'i (Qu., *uq'i*, 'gray') (G.P.) [D1367]

arequipa pasto (Sp., *pasto*, 'fodder'; Arequipa refers to the Peruvian city) (G.S.) [D1367]

Use unknown (G.P., G.S.).

Descurainia myriophyllum (Willd.) R. E. Fries

Colombia to Peru.

Yanacona, 3810 m. Herb on rock outcrop.

Cuper, 3350–3500 m. Herb on hillside.

sangra sangra (Qu.) (G.P., G.S.) [D1404, D1776]

ashña qhura (Qu.) possible name (Al.Q.) [D1404]

Capsules are used medicinally, possibly to treat pneumonia (G.S.). Use unknown (G.P., Al.Q.).

Descurainia titicacensis (Walp.) Lillo

Southern Peru to Argentina.

Cuper, 3810 m. Herb along trail near community center.

sangra sangra (Qu.) [D1362]

Used for kidney problems (G.P.). Boiled with *capulí* (*Prunus serotina* ssp. *capuli*) and *jora de chicha* (Sp., 'maize sprouted for making beer'), this plant is used to bathe children when they have diarrhea (N.C.).

Draba aff. D. cuzcoensis O. E. Schulz vel sp. nov.

Known only from Cusco, Peru.

Yanacona, 3800 m. Herb forming rosettes among rocks on dry pastured slopes of Titiqachimpa.

michi michi (Qu., *michi*, 'cat') (B.G.) [K127]

bolsa bolsa (Qu., from Sp. *bolsa*, 'bag') (P.P.) [K127]

Name and use unknown (Am.Q., G.S.) [K127]

Plant has no use (B.G., P.P.). G.S. made the unusual statement that he had never seen this plant before.

Draba sp. nov.?

Known only from Chinchero.

Tauca, 4050–4250 m. Herb forming rosettes on steep rocky slopes.

Name and use unknown (G.S.) [D1558]

Lepidium bipinnatifidum Desv.

Colombia to Bolivia.

Q'erapata, 3800 m. Herb in disturbed soil at edge of field.

Yanacona, 3750 m. Herb in inundated rows of fallow potato field on moist pampa.

chichira (Qu.) [D1619, D1607]

Said to be poisonous to guinea pigs, but not to cattle, who may eat it (G.S.). To treat *phiru* (Qu., an illness caused by contact with 'the Ancients,' with symptoms of joint aches), the plant is pounded with a stone and rubbed on legs or other affected area (B.G.).

Nasturtium officinale R. Br.

Cosmopolitan weed, native of Old World.

Cuper, 3100–3600 m. Herb in moist fen (D1410), on moist rocks near stream in quebrada (K253), in dry watercourse on hillside (D1778).

Q'erapata, 3800 m. Herb in wet seepage area of Ashnapuquio (D1610).

Pukamarka, 3800 m. Herb at edge of small stream in fields by Lake Piuray (K174). *mayu mostazilla* (Qu., *mayu*, 'running water'; Sp., *mostazilla*, 'little mustard') (G.P., G.S.) [D1410, D1610, D1778, K174, K253]
michi michi (Qu., *michi*, 'cat') (G.S.) [D1410]
 Name and use unknown (N.C., B.G.) [D1610]
ch'apu ch'apu (Qu.) possible name (N.C., B.G.) [D1610]
 Cooked and eaten as a main course dish (G.S., G.P.). Not eaten raw.

Raphanus sativus L.

Native to Europe and Eastern Asia; widely cultivated.
 Cuper, 3750 m. Cultivated in sector of fields called Waqkata.
rabanos (Sp., 'radishes') [F330]
 Unsuccessfully cultivated with carrots in corner of *habas* field; broadcast and never thinned.

Sisymbrium aff. oleraceum O. Schulz

Peruvian Andes.
 Cuper, 3450–3500 m. Herb on lightly grazed slopes above Puqpuq waterfall.
mayu mostazilla (Qu., *mayu*, 'running water'; Qu., diminutive from Sp. *mostaza*, 'mustard') [D1513]
 Use unknown (G.P.).

Sisymbrium peruvianum DC.

Peru, Bolivia.
 Cuper, 4500 m. Low herb in narrow quebrada in place called Qoriwayrachina.
 Name and use unknown [F314]

CUCURBITACEAE

Cyclanthera brachybotrys (Poeppig & Endl.) Cogn.

Colombia to Bolivia.
 Cuper, 3300–3450 m. Wild vine along edge of garden by brook (D1750) and on steep hillside (K214).
achuqcha (Qu.) (G.P.) [K214]
k'ita achuqcha (Qu., *k'ita*, 'feral') (G.S.) [D1750]
q'utu q'utu (Qu., *q'utu*, 'round lump,' such as goiter) alternate name (S.J.) [D1750]
 Green fruits of this wild plant are sold in the Cusco market to be eaten in

salads. Fruit is made into a tea to be drunk for belly ailments (S.J.).

Sicyos baderoa Hook. & Arn.

Ecuador to Chile.
 Q'erapata, 3800 m. Dense vine on adobe wall.
putaqllanku (Qu.) [D1601]
 Long lengths of this vine are wound around the necks of dancers during *Carnaval*, although increasingly being replaced by store-bought paper ribbons. The entire plant is boiled and used for bathing, or the leaves may be rubbed together and then rubbed on the body (G.S.). Used as a tonic (Sp., *refresco*) (B.G.).

CUNONIACEAE

Weinmannia producta Moric. ex DC.

Central and southern Peru.
 Cuper, 3360 m. Tree above Puqpuq waterfall.
 Name and use not recorded [D1792]
 The tree showed evidence of trimming for firewood.

CYPERACEAE

Cyperus hermaphroditus (Jacq.) Standley

Widely distributed in tropical America.
 Cuper, 3100 m. Somewhat dry slope among large rocks.
muqu muqu (Qu., *muqu*, 'knot' or 'joint') [K252]
 Use unknown (G.P.).

Cyperus sesleroides H.B.K.

Venezuela to Argentina.
 Cuper, 3500–3600 m. Sedge on grassy, somewhat scrubby, steep rocky slopes.
urqu pasto (Qu., *urqu*, 'hill'; Sp., *pasto*, 'fodder') suggested name [D1651]
pastucha (Sp., *pasto*, 'fodder'; Qu., *-cha*, 'little') description (N.C., B.G.) [D1651]
 Animal browse (G.A., N.C., B.G.).

Scirpus californicus (Mez) Steudel

Southwestern United States south to Argentina.
 Ayllu Punqu, 3800 m. Floating in clumps in lake.
khuyu (Qu.) (S.J., G.P., G.S.) [D1639]
tatora (Qu.) (B.G.) suggested name [D1639]
 Use unknown (B.G., S.J., G.P., G.S.).
 Similar to *sima* (Qu., *Festuca* sp., *Poa* sp.) but grows in lakes (G.S.).

DIOSCOREACEAE

Dioscorea ancashensis Knuth

Central and southern Peru.

Cuper, 3840 m. Herb in thin soil by large rock outcrop.

intiq papan (Qu., *intiq*, 'sun's'; *papan*, 'potato') (G.P.) [K145]

Name and use unknown (B.G., P.P.) [K145]

Use unknown (G.P.).

Dioscorea incayensis Knuth

Andes of Peru.

Cuper, 3150 m. Vine on shrubs among large rocks on steep, somewhat dry hillside.

ambar ambar (Qu. from Sp., *ambar*, 'amber') [K261]

Use unknown (G.P.).

Dioscorea piperifolia Humb. & Bonpl. ex Willd.

Colombia to Peru and Brazil.

Cuper, 3600 m. Climbing vine along trail; scandent vine on steep slopes.

ambar ambar (Qu. from Sp., *ambar*, 'amber') (G.P.) [D1457, D1489]

wilq'u (Qu.) possible name (G.S.) [D1457]

Name and use unknown (G.S.) [D1457]

Use unknown (G.P.).

ELAEOCARPACEAE

Vallea stipularis L.f.

Colombia to Bolivia.

Cuper, 3800 m. Woody shrub on dry grazed hillsides (D1447).

Ayllu Punqu, 3800 m (K140).

sullullumay (Qu.) (B.G., Am.Q., G.S.) [D1447, K140]

chiqllumay (Qu., *chiqllyuy*, 'to choose') (Au.Q.) [D1447]

chiqlllurway (Qu.) alternate name (P.P.) [K140]

canela (Sp., 'cinnamon') (A.Ca.) [D1447]

The wood is useful for housebuilding and as firewood (A.Co., T.H., G.S.). Foliage is boiled and used to wash the body if it becomes stiff, or to treat rheumatism (Am.Q., P.P., Au.Q., G.S.). Use unknown (A.Ca., B.G.).

ERICACEAE

Pernettya prostrata (Cav.) DC.

Costa Rica, Venezuela to Chile.

Tauca, 4050–4250 m.

Cuper, 3600–3900 m. Shrub on steep rocky slopes, woody shrub on Antakillqa hillside (D1543, D1688). Spreading, creeping herb among short grasses and mosses on rocky soil of Antakillqa hillside, above placed called Unu Urphuyuq (F304).

macha macha (Qu., *macha*, 'drunken') (B.G., L.H., L.P.) [D1543, D1686, F304]

macha macha (Qu., *macha*, 'drunken') suggested name [F357]

Name and use unknown (G.S.) [D1543, F357]

The berries are used to make you 'drunk,' for fun (B.G., L.H., L.P.). F304 and F357 were said by M.C., T.L., and G.S. not to be intoxicating, although they noted that children eat the berries.

ERYTHROXYLACEAE

Erythroxylum coca Lam.

Ecuador to Bolivia, Andean foothills.

Imported from Quillabamba area, Dept. of Cusco. Sold in markets.

coca (Qu.) not collected

Coca leaf is chewed on a daily basis by both male and female adult residents of Chinchero; its use is decreasing among younger adults. Leaves are kept in the mouth for up to an hour with the occasional addition of small pieces of *llypta* (Qu.), an alkaline admixture. *Llypta* is made locally from the ashes of combinations of plants generally including *tayñu* (Qu., the terminal flower clusters of *Puya werberbaueri*) (figs. 25–28). Every year between March and June, shepherds on the hillsides collect and prepare *tayñu* along with fragrant plants such as *asul ñuqchu* (*Plumbago coerulea*), *tayanqa* (*Baccharis tricuneata*), *suytu suytu* (*Eupatorium* sp.), and *isphinhuy* (e.g. *Aristeguietia* (*Eupatorium*) *discolor*). For example, the large *Puya* inflorescences may be formed into a pyramid and burned

ERRATUM

Some type was inadvertently dropped from the bottom of the right-hand column on page 66 of *Fieldiana: Botany*, New Series, No. 24. The last three lines of the following paragraph were erroneously omitted from the page.

ERYTHROXYLACEAE

Erythroxylum coca Lam.

Ecuador to Bolivia, Andean foothills.

Imported from Quillabamba area, Dept. of Cusco. Sold in markets.

coca (Qu.) not collected

Coca leaf is chewed on a daily basis by both male and female adult residents of Chinchero; its use is decreasing among younger adults. Leaves are kept in the mouth for up to an hour with the occasional addition of small pieces of *llypta* (Qu.), an alkaline admixture. *Llypta* is made locally from the ashes of combinations of plants generally including *tayñu* (Qu., the terminal flower clusters of *Puya werbaueri*) (figs. 25–28). Every year between March and June, shepherds on the hillsides collect and prepare *tayñu* along with fragrant plants such as *asul ñuqchu* (*Plumbago coerulea*), *tayanqa* (*Baccharis tricuneata*), *suytu suytu* (*Eupatorium* sp.), and *isphinhuy* (e.g. *Aristeguietia* (*Eupatorium*) *discolor*). For example, the large *Puya* inflorescences may be formed into a pyramid and burned first, then allowed to smolder, burning the other plant ingredients. People pulverize and sift the ashes after

lopes

'497]
cially
peo-
J.S.).
from
J.S.).

cos-

qpuq

'818]
diar-

/ field

open

t area
fields.
com-

'618]

erod-
hard

a hill-

com-
'709]
name

llow')

ponse
make
round

DIO:

Diosc

(

Diosc

(

Diosc

(

ELA:

Valle

(

/

ERIC

Perne

letting them sit for a day, then add enough liquid to create a gelatinous mass that they form into small patties. Lemon, boiled water, *chicha* (Sp., 'maize beer') with a little cane alcohol and sugar, and tea with sugar were each suggested for moistening the ashes. After drying in the air for a day or so, these cakes are conveniently stored, carried, and traded. Coca is offered for sale in the Chinchero Sunday market and the Cusco market. Coca functions as a nutritious element of daily diet; socially, as a medium for hospitality, exchange, and conversation; as a marker of ethnic identity; and ritually, as an offering to and expression of respect for the entire range of local and universal spiritual forces. Coca leaves are "thrown" (repeatedly cast) and "viewed" (interpreted, Qu. *qhaway*) in divinatory activity. Community members consult coca specialists for help in understanding a wide range of problems, particularly identifying thieves. The shapes, conditions, textures, and size of the leaves provide clues, as well as their orientation in space and to other leaves. When coca is not available, kernels of corn are sometimes used in a similar way.

The role of coca in Andean life is rapidly changing due to the pressures of the international market for coca derivatives. For a recent discussion of this problem, see Pacini and Franquemont (1986).

EUPHORBIACEAE

Euphorbia aronioides Pax & K. Hoffm.

Andes of southern Peru above 2000 m.

Cuper, 3450–3800 m. Shrub or small tree on steep hillside and on lightly grazed slopes above Puqupuq waterfall.

p'ispita (Qu.) (G.S.) [D1446, D1496]

t'asta (Qu.) (G.P.) [D1496]

Stems used to make baskets (G.S.). Plant has no use (G.P.).

Euphorbia huanchahana (Klotzsch & Garcke) Boiss.

In the Andes from Peru to Argentina.

Cuper, 3450–3500 m. Lightly grazed slopes above Puqupuq waterfall.

ñuñupunqa (Qu., *ñuñu*, 'breast') [D1497]

The plant is a strong purgative, especially the root (G.S.). One taste makes people vomit and have diarrhea (G.S.).

It is given to people suffering from intestinal blockage (Sp., *cólico*) (G.S.).

Euphorbia peplus L.

Native of temperate Eurasia, now a cosmopolitan weed.

Cuper, 3330 m. Old rocky field by Puqupuq brook.

ñuñupunqa (Qu., *ñuñu*, 'breast') [D1818]

This plant when ingested gives you diarrhea (B.G.).

GENTIANACEAE

Gentiana dolichopoda Gilg

Central to southern Peru.

Yanacona, 3750 m. Low herb in fallow field on moist pampa.

phalcha phalcha (Qu.) [D1626]

pampa phalcha (Qu., *pampa*, 'flat open place') [D1626]

Use unknown (G.S.).

Gentiana microphylla Griseb.

Peru.

Yanacona, 3750 m. On edge of boggy wet area of pampa of fallow and cultivated fields.

pinqayllikista (Qu., 'Have shame!' a command (G.P.) [D1618]

Name and use unknown (B.G.) [D1618]

No use reported (G.P.).

Gentiana persquarrosa Reim.

Peruvian Andes.

Ayllu Punqu, 3810 m. In cracks of large eroded rock called Maranqqa, and in hard pasture.

Cuper, 4500 m. On summit of Antakillqa hillside.

pinqayllikista (Qu., 'Have shame!' a command) (N.C., L.P.) [D1378, D1709]

puna phalcha (Qu.) alternate name (G.S.) [D1378]

qhillu phalcha (Qu., *qhillu*, 'yellow') (G.A.) [D1378]

The flower is said to close up in response to hearing its name. It is used to make a tea (N.C., L.P., G.S.), and ground



FIG. 25. These plants are gathered and burned; their ashes are made into *llipta*, an alkaline admixture chewed with coca: inflorescences of *awarunkhu* (*Puya weberbaueri*, D1647), woody stems and leaves of *tayanqa* (*Baccharis tricuneata*, D1521), and *suytu* (probably *Eupatorium volkensisii*, D1414) (photo S.K.).

raw to make a poultice for toothache (G.A.).

Gentianella rima (D. Don ex G. Don) Fabris
Peru.

Tauca, 4000–4280 m. Steep rocky slopes.

phalcha (Qu.) (M.H., T.H., G.S.) [D1564, K227]

Forage for llamas (M.H.); other use unknown (M.H., G.S.). Used to decorate altars carried in Holy Week procession (T.H.).

Halenia weddelliana Gilg
Colombia to Peru.

Tauca, 4050–4250 m. Steep rocky slopes.

phalcha (Qu.) (M.H.) [D1565]

urqu phalcha (Qu., *urqu*, 'hill') [D1565]

Name and use unknown (G.S.) [D1565]

G.P. identified plant as male by its flower.

Use unknown (M.H., G.P.).

GERANIACEAE

Erodium cicutarium (L.) L'Her.
Cosmopolitan weed.

Q'erapata, 3800 m. Herb in disturbed soil at edge of field.

Yanacona, 3750 m. On moist pampa of fallow and cultivated fields.

quwimira (Qu.) (N.C., B.G., G.S.) [D1609, K1630]

Whole plant is a favorite food for guinea pigs (G.S.). The raw seed capsules are ground in a rocker mill, then mixed with boiled water; this drink is given to women who are suffering in childbirth to prevent them from fainting (G.S.).

Geranium patagonicum Hook.f.

Southern Peru to Bolivia and Patagonia.

Cuper, 3100 m. Near stream in quebrada.

chili chili (Qu.) [K262]

Name and use unknown (T.H.) [K262]

Use unknown (G.P.).

Geranium sessiliflorum Cav.

Peruvian Andes. Also in Tasmania and New Zealand.



FIG. 26. M.H. and daughter pulverize ashes of plants to make *llipta* (photo CCTC).

Taucca, 4000–4250 m. Steep rocky slopes, cliff faces and lightly grazed draws.

chili chili (Qu.) [D1552, K192]

Possible use as tea to lower fever (M.T.).

Use unknown (G.S.).

***Geranium weddellii* Briq.**

Southern Peru and Bolivia.

Taucca, 4050–4250 m. Steep rocky slopes.

chili chili (Qu.) [D1569]

Used for tea (L.H., M.H.).

GRAMINEAE

Aciachne acicularis Laegaard, sp. nov. ined.

Venezuela, Colombia, Peru, Bolivia (2700–4500 m).

Taucca, 4000–4280 m.

paku yunqi (Qu.) [K226]

taruqa niño (Qu., *taruqa*, 'deer'; Sp., *niño*, 'child') (U.I.) [K226]

pasto (Sp., 'pasturage') description (T.H.) [K226]

Use unknown (O.H., T.H., U.I.).



FIG. 27. Liquid is added to the pulverized ashes so that they may be shaped into patties of *llipta*. Some people choose to sweeten the mass at this point by adding sugar or honey (photo CCTC).

***Agropyron breviaristatum* A. Hitchc.**

Andes of southern Peru (Cusco) and adjacent Bolivia.

Ayllu Punqu, 3810 m. Pockets of large eroded rock.

pasto (Sp., *pasto*, 'pasturage') [1380]

piki piki (Qu.) possible name (Au.Q.) [D1380]

No other name or use known (N.C., Au.Q., G.S.).

***Alopecurus aequalis* Sobol.**

In wet places in cooler parts of northern hemisphere; south in the Andes to Argentina.

Yanacona, 3750 m. In water on moist pampa of fallow and cultivated fields.

sonsa pasto (Sp., *zonza*, 'stupid'; *pasto*, 'pasturage') [D1628]

No use reported (G.P.).

***Avena sterilis* L.**

Introduced from Europe.

Cuper, 3810 m. Cultivated for fodder in house courtyard.

yuraq avena (Qu., *yuraq*, 'white'; Sp., *avena*, 'oats') [F373]

Said to be an older variety (G.S.).

negro avena (Sp., *negro*, 'black'; *avena*, 'oats') [F374]

Variety is said to have been introduced from the Huaypo cooperative five or six years ago. Matures quickly (four to five months). Not preferred for cultivation, though, since it is said to be very hot (Sp., *calido*). If animals eat too much of it, they can die: a day later, they stagger, act drunk or crazy, and have blood in their urine (M.C.).

Cuper, 3300 m. Grass at edge of garden on quebrada bottom.

Name and use not recorded [D1766]

***Bothriochloa saccharoides* (Sw.) Rydb.**

Neotropics.

Pirqa Kachun, 3620 m. Dry, open, grazed rocky ridge.

q'usi niwa (Qu.) [K315]

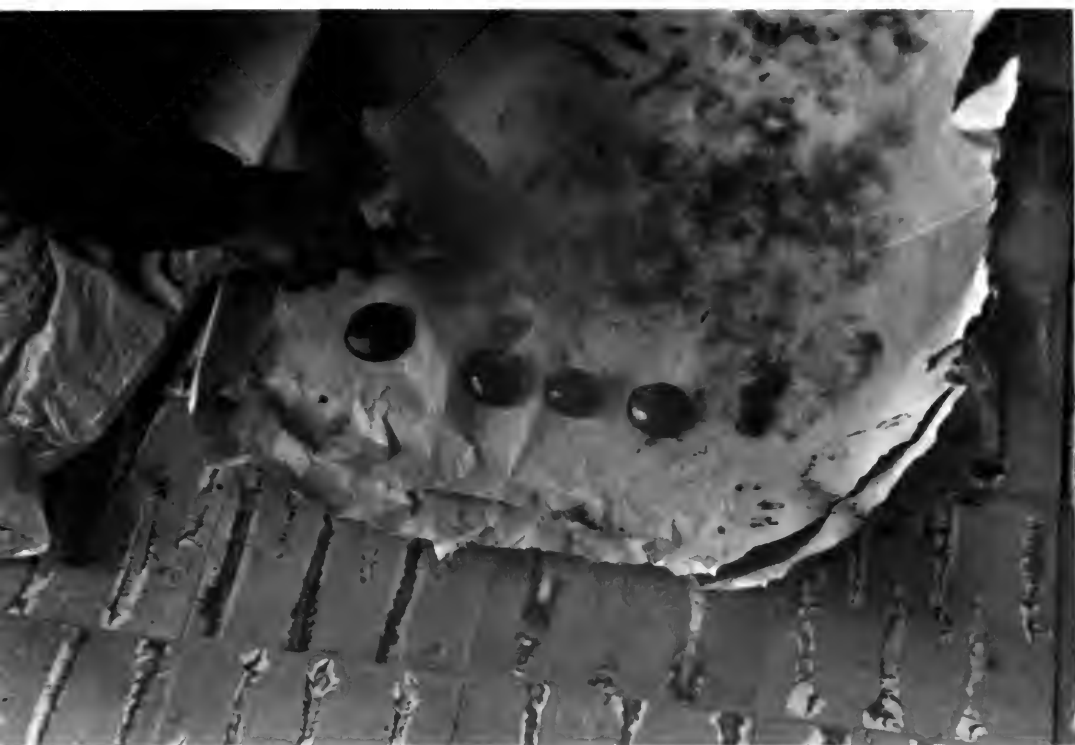


FIG. 28. Formed masses of *llipta* are allowed to dry, then are portable and long-lasting (photo CCTC).

Fodder (C.R.). Said by C.R. to be the same as *Muhlenbergia rigida*.

Brachypodium mexicanum (Roemer & Schultes) Link

Mexico to Bolivia.

Cuper, 3840 m. On Antasakha, a large rock outcrop.

ichu (Qu.) [K144]

pasto (Sp., 'pasturage') (T.H.) [K144]

Use unknown (T.H., G.P.).

Calamagrostis glacialis (Wedd.) A. Hitchc.

High Andes of northern Bolivia and southern Peru.

Tauca, 4050–4250 m. Grass forming dense tufts on steep, rocky slopes.

ichu (Qu.) (L.H., M.H., G.S.) [D1566]

Llama food (L.H., M.H.).

Cortaderia jubata (Lemaire) Stapf

Peru.

Cuper, 3300 m. By stream at edge of garden on quebrada floor.

niwa (Qu.) [D1765]

Use unknown (G.P.).

Cortaderia sp. (sect. **Cortaderia**)

Ayllu Punqu, 3800 m. On earthen mound bordering fallow field by Lake Punqulay.

niwa (Qu.) (B.G.) [D1638]

qhiswa rama (Qu., *qhiswa*, 'warm area') (S.J.) [D1638]

Entire plant used to make a tea for coughs (S.J.). Use unknown (B.G.).

Distichlis sp.

Tauca, 4200–4500 m. Common in high cold puna above Tauca.

Name and use unknown [F308]

Festuca dolichophylla Presl

High páramos; Ecuador to Bolivia.

Ayllu Punqu, 3810 m. Grass in cracks of large eroded rock called Maranqaqa.

ichu (Qu.) [D1392]

Used for thatching roofs (G.P., G.S.).

Festuca quadridentata H.B.K.

Previously known only from Ecuador.

Cuper, 3800 m. Along hedgerows.

sima (Qu.) [D1423]

Use unknown (G.S.).

Festuca sublimis Pilger

High Andes, Ecuador to Bolivia.

Ayllu Punqu, 3810 m. Grass in cracks of large eroded rock called Maranqaqa.

ichu (Qu.) [D1392A]

Culms used for thatching roofs (G.P., G.S.).

Yanacona, 3750 m. In clumps on moist pampa of fallow and cultivated fields.

q'uya (Qu.) [D1633]

Attached growing culms are braided in the field (Qu., *q'uya sempasqa*), then used as stakes to tether cows (G.P.).

Dried culms are used to make rope (G.P.).

Hordeum vulgare L.

Cultivated worldwide.

Cuper, 3750 m. Cultivated in field for sale to the Cerveza Cuzqueña (beer) factory.

yana cebada (Qu., *yana*, 'black'; Sp., *cebada*, 'barley') [F334]

konder cebada (Qu.?, Sp., *cebada*, 'barley') [F335]

crillon cebada (Sp., *cebada*, 'barley') [F336]

cebada comun (Sp., *cebada*, 'barley'; *comun*, 'common') [F337]

trigo ch'anka (Sp., *trigo*, 'wheat') [F338A, F338B]

Lamprothyrus hieronymi (Kuntze) Pilger

Previously known from Bolivia and Argentina.

Cuper, 3400–3550 m. Grass in dense clumps on steep, rocky, grazed slopes.

niwa (Qu.) [D1487]

q'usi niwa (Qu.) [D1784]

Used as lower layer of thatch in roofing, because the leaves have saw-tooth edges that, it is said, cut the ears off mice as they try to scamper along the ceiling (G.S.). It is also used for making twisted ropes (Qu., *k'iswa*), but is being used less now since tiles are replacing thatch on roofs, and nails hold armatures together rather than rope (G.S.).

Lolium temulentum L.

Native to Eurasia, naturalized in America.

Cuper, 3700 m. In wheat field on hillside in Waqkata sector of Cuper.

cerizuela (Sp.?) [F333]

Always grows in wheat fields, and may

be the closest thing to a wild grain that could be said to exist (G.S.).

Melica scabra H.B.K.

Ecuador to Bolivia.

Ayllu Punqu, 3810 m. In cracks of large eroded rock called Maranqaqa.

pasto (Sp., 'pasturage') [D1383]

No other name or use known (G.S.).

Muhlenbergia rigida (H.B.K.) Kunth

Mexico to Argentina.

Pirqa Kachun, 3620 m. Grass on dry, open grazed rock ridge.

q'usi niwa (Qu.) [K316]

Useful as sheep fodder, and for rope-making (C.R.).

Nasella pubiflora (Trin. & Rupr.) Desv.

Ecuador to Chile.

Ayllu Punqu, 3810 m. In cracks of large eroded rock called Maranqaqa.

pata pata pasto (Qu., *pata*, 'flat place'; Sp., *pasto*, 'pasturage') (G.S.) [D1394]

ichu (Qu.) (N.C., Au.Q.) [D1382]

Used for thatch (Au.Q.) (figs. 29–30).

Nasella aff. linearifolia (Fourn.) R. Pohl

Cuper, 3450 m. At base of Puqpuq waterfall.

ichu (Qu.) [D1738]

Use unknown (S.J.).

Pennisetum clandestinum Hochst. ex Chiov.

Introduced for forage from Africa.

Yanacona, 3800 m. Along old road on pampa of fallow and cultivated fields.

rama, grama (from Sp.) [D1627]

kikuyu (? 'kikuyu grass') [D1627]

Eaten by all herbivorous animals (G.S.).

This grass is now common throughout the Cusco area below 4000 m., replacing many indigenous species. Camelids cannot eat it, a factor in the reduction and marginalization of camelid herding in the community of Chinchero.

Poa horridula Pilger

Ecuador to Bolivia.

Cuper, 3500–3600 m. Grass forming small clumps on steep rocky slopes of Antakillqa hillside.

sima pasto (Qu.; Sp., *pasto*, 'pasturage') (G.P.) [D1660]

sima sima qhura (Qu., *qhura*, 'herb') (N.C., B.G.) [D1660]

Use unknown (G.P.).



FIG. 29. M.C. and neighbor lay bundles of thatch onto a new roof (photo CCTC).

***Poa* sp. aff. *P. horridula* Pilger**

Taucca, 4050–4250 m. Grass forming clumps on steep rock face.

sima (Qu.) [D1555]

Use unknown (G.S.).

***Polypogon interruptus* H.B.K.**

Introduced; native of Mediterranean region.

Ayllu Punqu, 3750 m. Grass at edge of small pool near lake.

Cuper, 3800 m. Grass in cultivated potato field along brook.

sonsa pasto (Sp., *zonza*, 'stupid'; *pasto*, 'pasturage') (G.P., G.S.) [D1635, K119]

pastucha (Sp., *pasto*, 'pasturage'; Qu., *-cha*, 'little') (B.G.) [D1635]

pasto de la quebrada (Sp., 'pasturage of the canyon') (T.H.) [K119]

Eaten by cows (B.G.). Use unknown (T.H., G.P., G.S.).

***Stipa ichu* (Ruiz & Pavón) Kunth**

Mexico to Argentina at higher elevations.

Cuper, 3450–3500 m. On edge of potato field on lightly grazed slopes above Puqupuq waterfall.

niwaq qhura (Qu., *qhura*, 'herb') (A.Co., A.Ca.) [D1503]

iri ichu (Qu., *iri*, 'fierce' or 'wild') [D1503]

Used for gates and fences (A.Co., A.Ca.).

The designation *iri* refers to its fine prickling points; animals will not eat it (G.S.).

***Trisetum* sp. aff. *preslii* Desv.**

Peru and Chile.

Ayllu Punqu, 3810 m. In cracks of large eroded rock called Maranqaqa.

Name and use not recorded [D1381]

pasto (Sp., 'pasturage') (G.S.) [D1381]

***Triticum aestivum* L.**

Cuper, 3700 m. Cereal cultivated in the Waqkata sector of Cuper.

Huancapata (Cuper), 3850 m. Cereal cultivated in field.

trigo cahuide (Sp., *trigo*, 'wheat') [F331]

Cultivated in field for use as animal food



FIG. 30. A.H. thatching a roof. *Eucalyptus* is laid on the lowermost layer to make the house smell nice. Bundles of *ichu* grass are sewn onto the purlins with rope made from twisted, pounded grasses (photo CCTC).

and human food, such as wheat soup (Qu., *trigo lawa*).

asul qumpa trigo (Sp., *azul*, 'blue'; *trigo*, 'wheat'; Qu., *qumpa*, 'awnless') [F332]

trigo (Sp., 'wheat') [F340]

Cereal cultivated in field for use as animal food and human food, as in wheat soup (Qu., *trigo lawa*). Seed was brought from Paucartambo (G.S., M.H.). Small field was planted almost entirely to this variety.

Zea mays L.

Native to Mexico, now cultivated worldwide.

Cuper, 3300 m. Cultivated in garden.

sara (Qu., 'maize') [D1767]

Cultivated for household consumption (G.P.) (figs. 31–32).

GUTTIFERAE

Hypericum caespitosum Cham. & Schldl.

Peru and Chile.



FIG. 31. S.J. uses a gourd as ladle to test *chicha* (photo CCTC).

Yanacona, 3800 m. Fallow fields above new road.

hayaq pilli (Qu., *hayaq*, 'bitter' or 'stinging'; *pilli* refers to the form in which the ray florets radiate from a central ring, as feathers do from a headdress) (G.P., G.S.) [D1594]

Name unknown (M.H.) [D1594]

Tauca, 4050–4250 m. Steep rocky slopes.

Name unknown (G.S.) [D1517]

The plant has no use except as sheep fodder (M.H., G.P., G.S.).

HALORRHAGIDACEAE

Myriophyllum quitense H.B.K.

Ecuador to Patagonia, Uruguay.

Yanacona, 3750 m. Submerged aquatic in moist pampa of fallow and cultivated fields.

hataqllu (Qu.) [D1625]

Eaten by cattle (G.P.).

HYDROCHARITACEAE

Elodea potamogeton (Bertero) Espinosa

Peru.

Cuper, 3750 m. Submerged in slow-moving creek.

Ayllu Punqu, 3800 m. In shallow pools by Lake Punqulay.

Ch'ussu, 3800 m. In shallow pools by Lake Piuray.

ch'ankil (Qu.) [D1634, K118, K272]

Used as a tonic (Sp., *refresco*) and to bathe the body (B.G.). Use unknown (G.S.).

HYDROPHYLLACEAE

Phacelia pinnatifida Griseb.

Southern Peru to Argentina.

Cuper, 3400–3700 m. Steep, rocky slopes and grazed hillside above Puqupuq waterfall; below rock cliffs along trail at place called Wayraqpunku.

suq'a khisa (Qu., *suq'a*, 'dangerous spirit'; *khisa*, 'nettle') [F376]

Name and use unknown (G.S.) [D1471]



FIG. 32. M.L. strains boiled *jora* into a *raki* (*chicha* jar) through a layer of *ichu* (high-altitude grass spp.) on a basket (photo CCTC).

Name and use not recorded [D1783]

Sometimes causes rash, immediately or several days after handling; not even animals eat it (S.J., G.S.). Plant was identified when collected in July, when it had a very strong unpleasant odor. Specimens collected in January were not recognized, even by the same individuals.

***Phacelia secunda* J. Gmelin**

Peru to Chile and Argentina.

Cuper, 3840 m. Rock outcrop called Antasakha.

pampa sutuma (Qu.) suggested name (G.P.) [K142]

suphu suphucha (Qu., *suphu*, 'hairy') suggested name (Am.Q., G.S.) [K142]

Name and use unknown (P.P.) [K142]

Use unknown (G.P.).

IRIDACEAE

***Hesperoxiphion peruvianum* Baker**
Peruvian Andes.

Cuper, 3100–3150 m. Somewhat dry slope with large rocks in quebrada.

Name and use unknown (G.P.) [K241]

***Mastigostyla herrerae* (Vargas) Ravenna**
Peru (Department of Cusco)

Cuper, 3500–3700 m. Antakillqa hillside.
cebolla cebolla (Qu., from Sp. *cebolla*, 'onion') (G.P.) [K282]

sima sima pasto (Qu.; Sp., *pasto*, 'pasture') alternate name (C.R.) [K282]

No use for this plant except as cattle fodder (G.P., C.R.).

***Sisyrinchium caespitificum* Kränzlin**

Andes of Peru.

Cuper, 3330–3600 m. Forming clumps on steep wet rock face by brook below Puqpuq waterfall, and on steep slopes of Antakillqa hillside below place called Asñuq Chakin.

pampa sunqu lirio (Qu., *pampa sunqu*, 'solitary'; Sp., *lirio*, 'lily') [F267]

Name and use not recorded [D1806]

Plant has no use (G.S.).

Sisyrinchium junceum Meyer

- Peru to Chile and Argentina.
 Cuper, 3500–3810 m. Along trail, and on steep rocky slopes of Antakillqa hillside.
 Name and use unknown (G.A., N.C., B.G., G.S.) [D1351, D1668]
 Taucca, 4050–4250 m. Steep rocky slopes.
ichu ichu (Qu.) name known only in Taucca (L.H.) [D1535]
 Name and use unknown (G.S.) [D1535]
 Use unknown (L.H.).

Sisyrinchium laxum Sims

- Peru to Chile, Brazil, Uruguay.
 Yanacona, 3750 m. Moist pampa of fallow and cultivated fields.
q'umu q'umu qhura (Qu., *q'umu*, 'bent over'; *qhura*, 'herb') suggested name (G.P.) [D1624]
 Taucca, 4050–4250 m. Steep rocky slopes.
ichu ichu (Qu.) [D1549]
 Name unknown (G.S.) [D1549]
 Use unknown (G.P., G.S.).

Sisyrinchium praealtum Kränzlin

- Southern Peru.
 Cuper, 4500 m. Forming dense clumps in thick grass covering exposed rocks on summit of Antakillqa hill.
sima sima (Qu.) (L.P.) [D1702]
 Name and use unknown (B.G.) [D1702]
 Use unknown (L.P.).

Sisyrinchium pusillum H.B.K.

- Ecuador and Peru.
 Cuper, 3500–3700 m. Grassy slope of Antakillqa hillside.
 Name and use unknown (B.G., Am.Q., P.P., C.R., G.S.) [K287]
 Similar to *sara sara* (Am.Q., G.S.).

JUGLANDACEAE**Juglans neotropica** Diels

- Peru, Colombia, Ecuador, Venezuela.
nogal (Sp., 'walnut tree') not collected
 Brought from Urquillos at the lowest border of Chinchero to be sold in the Sunday market for a dye giving a brown which is currently the most common color of Chinchero men's ponchos. Skeins of yarn are steamed for hours over large quantities of bruised *nogal* leaves. Darker brown shades from yarn on the bottom of

the pot are striped with lighter shades from the top of the pot in warping the poncho.

JUNCACEAE**Juncus dombeyanus** C. Gay ex Laharpe

- Ecuador to Chile, Argentina and Uruguay.
 Yanacona, 3750 m. Herb in moist soil in old field along brook below Chinchero ruins.
pampa khuyu (Qu.) [K123]
 Name and use unknown (T.H.) [K123]
 Use unknown (G.S.).

Juncus imbricatus Laharpe

- In the Andes from Colombia to Chile and Argentina; South Africa; Australia.
 Cuper, 3750 m. In moist fallow fields and shallow water in meadow along brook.
khuchi much'u (Qu., *khuchi*, 'pig'; *much'u*, 'nape of neck') [K121]
rama rama (Qu.) alternate name (T.H.) [K121]
 Name draws comparison between the plant and the way the hairs stick up on the back of a pig's neck (G.S.).
 Use unknown (T.H., G.S.).

Juncus tenuis Willd. var. **platycaulos** (H.B.K.)

- Buchenau
 Species is North American, spread to South America, Europe, Australia, N. Zealand.
 Yanacona, 3750 m. In fallow and cultivated fields along old road across moist pampa.
caballuq muchun (Qu. from Sp., *caballuq*, 'horse's'; *muchun*, 'nape of neck') [D1617]
tatora (Qu.) (B.G.)
 Use unknown (B.G., G.P.).

Luzula racemosa Desv.

- Colombia to Chile.
 Taucca, 4050–4250 m. Steep rocky slopes.
 Cuper, 3500–3600 m. Steep rocky slopes of Antakillqa hillside.
q'umu q'umu (Qu., *q'umu*, 'bent over') (U.I.) [D1561, D1646]
ichu ichu (Qu.) (N.C., B.G.) [D1646]
 Name unknown (G.A.) [D1646]
 Sold by local vendors in Chinchero Sunday market. The flower is used to make a tea for cough (G.A., G.S.), for sideache (Sp., *costado*) (B.G.), and for backache (U.I.).

KRAMERIACEAE

Krameria lappacea (Dombey) Burdet & Simpson
Peru and Bolivia.

Cuper, 3100–3150 m. Herb on somewhat dry slope with large rocks.

chinchamali (Qu.) (G.P., B.Q.) [K242]

pinku pinku (Qu.) alternate name (T.H.) [K242]

Woody stems of this plant are sold in the Chinchero Sunday market for women's use to induce menstrual bleeding (B.Q.). The roots provide a dye (G.P.); if *nogal* (Sp., *Juglans neotropica*) is overdyed with *chinchamali*, the brown takes on a rosy hue (T.H.). Our dye experiments with this plant produced a series of rose to tan colors.

LABIATAE

Hedeoma mandonianum Wedd.

Andes of Peru and Bolivia.

Cuper, 3600–3900 m. Low herb on rock at place called Masuk'ayuq and other areas on steep Antakillqa hillside.

pampa khuñuqa (Qu.) (B.G., L.P., G.S.) [D1538, D1689]

Name unknown (T.L.) [F300]

Name and use unknown (G.A.) [D1689]

The whole plant is boiled to make a tea (L.P.) for stomachache (B.G., T.L.).

Grazed by animals on pampas (G.S.).

Tauca, 4000–4280 m. Steep rocky slopes, moist cliff among mosses.

Name and use not recorded [K229]

Lamium amplexicaule L.

Widespread temperate weed, naturalized from Europe.

Tauca, 4000–4280 m.

corbojo (Qu., from Sp.) [K218]

Use unknown (O.H.).

Lepechinia floribunda (Benth.) Epling

Peru to Argentina.

Cuper, 3100–3150 m. Somewhat dry slopes with large rocks.

ásul ñuqchu (Qu. from Sp., azul, 'blue') [K259]

Urquillos, approx. 3100 m. Along road at place called Erapata.

sach'a salvia (Qu., *sach'a*, 'tree'; Sp., *salvia*) suggested name (S.J., G.S.) [F327]

Use unknown (S.J., G.P., G.S.).

Lepechinia meyenii (Walp.) Epling

Peru to Argentina.

Yanacona, 3750 m. Fallow field on moist pampa.

Tauca, 4050 m. Disturbed soil near brook in community center.

salvia (Sp.) [D1581, D1622]

Consumed as a tea, for breakfast (M.H.), or to treat intestinal blockage (Sp., *cólicos*) (G.S.) or stomachache (B.G.).

Minthostachys glabrescens (Benth.) Epling

Ecuador and Peru.

Cuper, 3450–3550 m. Steep rocky slopes along stream in quebrada above Puqpuq waterfall.

muña (Qu.) [D1476]

Used as a fragrant herb in soups or lunch plates (G.S.).

Salvia dombeyi Epling

Andes of Peru and Bolivia.

Ch'usu, 3800 m. Tall herb near edge of stream.

ñuqchu (Qu.) [K278]

This species of *Salvia* is cultivated, although this individual plant was no longer cared for. The plant with its showy, red flowers is wound around the arms of the figure of Christ for the Holy Week processions (T.H.).

Salvia oppositiflora Ruiz & Pavón

Peruvian Andes.

Cuper, 3600–3700 m. Shrub along trail.

salvia ñuqchu (Qu., from Sp., *salvia*, 'sage') (G.P.) [D1436]

puka ñuqchu (Qu., *puka*, 'red') (G.S.) [D1436, D1442]

saqraq ñuqchu (Qu., *saqraq*, 'devil's') (G.P.) [D1442]

Use unknown (G.S., G.P.).

Pirqa Kachun, 3000–3300 m. Erect herb on dry hillside.

ñuqchu (Qu.) (C.R.) [K310]

During Holy Week, the red flowers are gathered by children and thrown on the figure of Christ in processions to represent his blood. The streets of Cusco are red with corollae of *Salvia oppositiflora* thrown to the figure from balconies during processions of the fiesta of Corpus.

Salvia rhombifolia Ruiz & Pavón

Central and southern Peru.

Pirqa Kachun, 3750 m. Herb in packed soil in old field.

ñuqchu (Qu.) (G.S.) [K294]

yerba de cancer (Sp., 'herb for sores') alternate name (C.R.) [K294]

Use unknown (C.R., G.S.).

***Salvia sarmentosa* Epling**

Peru and Chile.

Cuper, 3700 m. Shrub along trail.

ásul ñuqchu (Qu. from Sp., *azul*, 'blue') [D1435]

Use unknown (G.S.).

***Salvia verbenacea* L.**

Native of Europe and North Africa. Naturalized in Peru, Argentina, and Uruguay.

Q'erapata, 3800 m. Herb at edge of field.

alosima (from Sp., *alhucema*, 'lavender,' *Lavandula* sp.) possible name (G.S.) [D1605]

yerba de cancer (Sp., 'herb for sores') possible name (N.C., B.G.) [D1605]

Plant is a 'mint' but not used (G.S.).

***Satureja boliviana* (Benth.) Brig.**

Peru to Argentina.

Yanacona, 3810 m. Shrub on rock outcrop called Sakarara below Albergue.

khuñuqa (Qu.) [D1400]

Tea made from the leaves is drunk for stomachaches (G.P.) or colds (G.S.). Crushing the leaves and sniffing them reportedly is also helpful for colds (G.S.). Fresh herb is used in cooking *sopa de ch'uñu* (soup made from freeze-dried potatoes) (N.C.). Along with *ichu* (*Festuca* spp.), this plant is placed in large quantities with potatoes during storage in order to protect them from insects which are repelled by the odor (N.C.). Similar to *muña* (Qu.) (Au.Q., G.S.).

Cuper, approx. 3750 m. Fragrant shrub along trail in place called Wayraq Punku.

khuñuqa (Qu.) [F260]

To store *oca* or potatoes, spread *khuñuqa* on the ground, then put the tubers on top of it before covering with *ichu*. *Khuñuqa* is said to repel worms (Sp., *gusanos*). Used especially with *oca*, which are particularly subject to worm attack. Also used to make tea for *resfriados* (Sp., 'colds'), as is *muña*

(Qu., *Minthostachys glabrescens*). *Muña* is used in soups, but *khuñuqa* is not.

***Stachys aperta* Epling**

Central and southern Peru.

Yanacona, 3800 m. Herb near albergue in community center.

Cuper, 3800 m. Herb along trail.

yerba de cancer (Sp., 'herb for sores'; pronunciation varies to *yawar kansir*) [D1444, D1676]

As a tea, this is a useful treatment for those who have drunk too much *trago* (Sp., 'cane alcohol') and for *inflamación* (Sp.) (B.G.). Leaves are steeped with milk and applied to surface ulcers (G.S.), and used to wash out wounds (Qu., *khiri*) and sores (G.A.). Also used for mate (G.P.). No Quechua name was reported.

LEGUMINOSAE

***Adesmia miraflorensis* E. A. Remy**

Peru and Bolivia to Patagonia.

Cuper, 3450–3500 m. Subshrub on lightly grazed slopes above Puqpuq waterfall.

Name and use unknown (B.G., G.S.) [D1506]

Adesmia muricata* (Jacq.) DC. var. *muricata

Peru south to Chile and Patagonia; eastern Brazil.

Pirqa Kachun, approx. 3800 m. Spreading vine on hillside.

Name unknown [F323]

Used to treat illnesses of livestock (G.S.).

***Astragalus garbancillo* Cav.**

Peru to Argentina.

Cuper, 3810 m. Common weedy shrub in open fields and on hedgerows along trail immediately above community.

q'ira (Qu.) (G.P., G.S.) [D1358]

Boiled with cane alcohol and rubbed on the legs to relieve pain (G.P.).

***Astragalus uniflorus* DC.**

Peru and Bolivia.

Taucca, 4050–4250 m. Spreading herb forming low dense mats on steep rocky slopes above community.

tarwi tarwi (Qu.) possible name (G.S.) [D1518]

Name and use unknown (G.S.) [D1518, D1568]

hanq'as (Qu.) (M.H.) [D1568]

Eaten by sheep (M.H.).

Astragalus weddellianus (Kuntze) I. M. Johnston
Cusco, Puno to Tucumán and Catamarca
of Argentina.

Tauca, 4050–4250 m. Herb forming tufts on
steep rocky slopes above community.

waña husqa (Qu., *waña*, 'small in stature')
(L.H.) [D1551]

Useful to treat sprained or twisted ankles
(*chaki q'imukaq*, Qu.) (L.H.). This
plant is called *q'ira* in the central
communities of Chinchero, but is
called *husqa* in Tauca (L.H., G.S.).

Cologania pulchella H.B.K.

Peru and Bolivia.

Cuper, 3100 m. Plant vining on shrubs in
moist maize garden.

wilk'u (Qu.) [K257]

Use unknown (G.P.).

Crotalaria incana Ruiz & Pavón

Probably native to Neotropics; now
throughout tropical and subtropical re-
gions.

Cuper, 3100–3150 m. Herb spreading to erect
among large rocks on somewhat dry slope
in quebrada.

alfalfa (Sp.) possible name (G.P.) [K255]

ch'uulkus (Qu.) possible name
(T.H.) [K255]

Use unknown (T.H., G.P.).

Urquillos, 3100 m. Spreading woody herb on
steep hillside above town.

Name and use not recorded [F325]

Dalea exilis DC.

Peru.

Cuper, 3100–3150 m. Herb on lower slopes
of Antakillqa hillside.

husqa (Qu.) [K246]

qhishwa pimpinilla (Qu., *qhishwa*, 'warm
area'; Sp., *pimpinela*, 'burnet') alter-
nate name (Am.Q., G.S.) [K246]

pavitos (Qu.) (B.G.) [K246]

Twists and sprains are treated with a
poultice made of the young plant to-
gether with wheat flour and other
plants: *ch'iri ch'iri* (*Grindelia boli-
viana*), leaves of *ch'ilka* (*Baccharis
latifolia*), *yawar ch'unqa* (various
spp.), *puma tanqa* (*Azorella multi-
fida*) (P.P.). Use unknown (Am.Q.,
B.G., G.S.).

Dalea pazensis Rusby

Peru and Bolivia.

Perga Kachun, 3000–3300 m. Erect herb along
trail.

husqa [K309b]

pampa husqa (Qu., *pampa*, 'flat open space';
also 'low-growing') [K309b]

Used for a warm (not hot) bath (C.R.).

Dalea smithii (J.F. Macbr.) J.F. Macbr.

Southern Peru.

Urquillos, approx. 3100 m. Erect herb along
road at place called Erapata.

binbinilla (Qu., from Sp. *pimpinela*, 'bur-
net') [F326]

Drunk in tea.

Lathyrus longipes Philippi

Peru to Chile and Argentina.

Cuper, 3500–3900 m. Climbing, twining vine
along trail and at place called Chaqch-
akillaychimpa and other areas of steep
rocky slopes of Antakillqa hillside.

albergascha (Qu., from Sp. *arvejas*, 'peas';
Qu., *-cha*, 'little') [F288A]

pavitos (Qu.) (G.A., B.G., G.P.) [D1439,
D1643]

hatun pawitus (Qu., *hatun*, 'big') (N.C.,
B.G.) [D1643]

pampa pavitos (Qu., *pampa*, 'flat open
space'; also 'low-growing') (L.P.)
[D1695]

puna pawituscha (Qu., *puna*, 'high area';
-cha, 'little') alternate name [F288A]

puna pimpinilla (Qu., *puna*, 'high area'; from
Sp. *pimpinela*, 'burnet') [F288A]

The plant is steeped to make a tea to treat
ailments such as 'black cough' (Qu.,
yana ukhun), a child's ailment which
causes them to hunch over (G.A.,
B.G.). The flowers are ornamental
(L.P.). Use unknown (T.L.). Plant
(D1439) has no use and is the 'same'
as D1438 (*Vicia andicola*) (G.P.).

Lupinus aff. hornemanii Agardh

Ecuador and Peru.

Cuper, 3500–3800 m. Woody-based shrub on
steep, rocky, grassy, somewhat scrubby
slopes of Antakillqa hillside.

hanq'as (Qu.) (N.C., B.G., G.S.) [D1433]

macho tarwi (Sp., *macho*, 'male'; Qu., *tar-
wi*, 'lupine') (G.P.) [D1670]

This plant is recognized in Chinchero as
a feral form of *tarwi* (Qu., *Lupinus*

mutabilis). Leaves are useful to treat sprained ankles (N.C., B.G.). Use unknown (G.P., L.P., G.S.).

Lupinus mutabilis Sweet

Cultivated from Colombia to Bolivia.

Pukamarka, 3800 m. Herb cultivated for edible seeds in fields next to Lake Piuray.

ruyaq tarwi (Qu., *ruyaq*, 'white'; pronunciation varies to *tawri*) [K151]

Flowers white. Has a better taste (more 'sweet,' Qu., *k'ayna*) than *ásul tarwi* (K152) (Jo.C.). To be edible, seed must be detoxified by soaking in water for one day, then boiling for one hour, then soaking for six more days (Jo.C.). This variety is planted in September, harvested in June (Jo.C.). Seed for this crop was purchased in Cusco and came from Paucartambo (Jo.C.). The seed harvested from this variety brings a higher price in Cusco than that of *ásul tarwi* (K152) (Jo.C.).

tarwi (Qu.) [K152]

ásul tarwi (Qu. from Sp., *azul*, 'blue') [K152]

Flowers blue. To be edible, seed must be detoxified by soaking in water for one day, then boiling for one hour, then soaking for ten more days (Jo.C.). This variety, like *ruyaq tarwi*, is planted in September, harvested in June (Jo.C.).

Seeds of *Lupinus mutabilis* (Qu., *tarwi*) contain high levels of quinolizidine alkaloids which are removed in the process of soaking, boiling, and further soaking described above. The seeds are then peeled and eaten raw, or cooked as an ingredient in soups or stews. *Yuraq tarwi* (K151), a cultivar with white flowers, was recognized as being sweeter (Qu., *k'ayna*) than the blue-flowered cultivar (K152), requiring less processing, and selling for a higher price in Cusco. Both crops are planted in September and harvested in June.

Lupinus prostratus Agardh

Peru (Junín).

Tauca, 4050–4250 m. Herb on steep rocky slopes above community.

tarwi tarwi (Qu., *tarwi*, *Lupinus mutabilis*) (M.T.) [D1567]

hanq'as (Qu.) possible name (G.S.) [D1567]

Use unknown (G.S., M.T.). G.S. noted that although the Tauca name *tarwi*

tarwi seemed logical to him, he had never heard it before and felt that *hanq'as* would also be a logical name.

Lupinus aff. prostratus Agardh

Peru (Junín).

Cuper, 4500 m. Herb on summit of Antaki-llqa hill.

hanq'as (Qu.) [D1723]

Use unknown (L.P.).

Tauca, 5000 m. Low spreading herb along trail in puna.

pampa hanq'as (Qu., *pampa*, 'low-growing') [F360]

Plant has no use (E.C., Au.Q., G.S., J.S.).

Medicago hispida Gaertner

Introduced weed, native of Europe.

Yanacona, 3750 m. Low herb in old field along brook below Chinchero ruins.

trebol (Sp., 'clover') [K115]

The plant has no use or Quechua name (T.H., G.S.).

Medicago lupulina L.

Introduced weed, native of Europe.

Yanacona, 3750 m. Herb from stout roots in old field along brook below Chinchero ruins.

falso alfalfa (local Sp., 'false alfalfa') (G.S.) [K122]

alfalfa (Sp.) (T.H.) [K122]

Use unknown (T.H., G.S.).

Medicago sativa L.

Introduced weed, native of Europe.

Cuper, 3300 m. Herb on side of small maize field on quebrada floor.

alfa alfa (Qu., from Sp. 'alfalfa') [D1760]

Use unknown (G.P.).

Melilotus indica (L.) All.

Cosmopolitan weed, native of Europe.

Cuper, 3450–3500 m. Herb at edge of small potato field on lightly grazed slopes above Puqupuq waterfall.

alfa (Qu., from Sp. 'alfalfa') [D1505]

alfa alfa (Qu., from Sp. 'alfalfa') [D1505]

alfalfa falsa (Sp., 'false alfalfa') [D1505]

Eaten by animals (G.S.).

Phaseolus augustii Harms

Peru and Bolivia.

Cuper, 3100 m. Wild vine in small moist maize field in quebrada.

willk'u (Qu., 'vine') (P.P.) [K254]

ambar ambar (Qu., from Sp. *ambar*, 'amber') (P.P.) [K254]

wihuhu (Qu., from Sp. *bejuco*, 'vine') (Am.Q.) [K254]

Name and use unknown (B.G.) [K254]

A troublesome weed that, as P.P. described it, '*mata maíz y país*' (Sp., 'kills maize and country'). The plant is said to be able to kill a tree by strangling it (P.P., Am.Q.).

***Pisum sativum* L.**

Introduced crop plant, native to Europe or Near East.

Pukamarka, 3800 m. Cultivated in fields next to Lake Piuray.

albergas blancas (local Sp., *arvejas*, 'peas'; *blancas*, 'white') [K164]

albergas rojas (local Sp., *arvejas*, 'peas'; *rojas*, 'red') [K165]

Varieties distinguished by flower color: white (*blancas*) and red (*rojas*). Although J.C. obtained the seed for both crops from his family, rather than purchasing it, he noted that *albergas rojas* were an 'old' (Sp., *antiguo*) traditional variety. The seeds of the newer variety, *albergas blancas*, are larger and more prolific than those of *albergas rojas*.

***Psoralea pubescens* Pers.**

Central and southern Peru.

Cuper, 3450–3500 m. Woody shrub at edge of small potato field on lightly grazed slopes above Puqpuq waterfall.

wallwa (Qu.) (G.S.) [D1501]

ñuñumiya (Qu., *ñuñu*, 'breast,' 'milk') (A.Ca., A.Co.) [D1501]

Useful only as fuel (A.Ca., A.Co., G.S.).

***Senna versicolor* (Vog.) Irwin & Barneby**

Ecuador to Bolivia.

Cuper, 3810 m. Shrub along trailside, often in hedgerows, above Chinchero center.

muthuy (Qu.) [D1365]

This common plant has a wide variety of uses. Juice squeezed from the plant into washwater is used to wash hair in the morning (N.C.). A poultice of *muthuy* together with the spines of *k'aqla uchu uchu* (Qu., a cactus, cf. *Opuntia*) is used to treat a toothache (N.C.). If you have been passed over by the wind, burn a little *muthuy* and rub it on your face (G.P.).

Children are bathed in water containing fresh leaves of *muthuy* to fight fever.

***Spartium junceum* L.**

Introduced. Native to Mediterranean region.

Cuper, 3810 m. Shrub along trailside, often in hedgerows, above Chinchero center.

retama (Sp.) [D1339]

Flowers are rubbed together and added to maize beer (Sp., *chicha*) to make it more intoxicating (G.P.). Plant has no Quechua name.

Trifolium amabile* H.B.K. var. *amabile

Mexico to Patagonia.

Cuper, 3450–3500 m. Herb at edge of potato field on lightly grazed steep rocky slopes above Puqpuq waterfall.

Yanacona, 3800 m. Herb from deep taproot on dry steep rocky pastured slope facing Chinchero ruins.

layu (Qu.) (G.P., G.S.) [D1499, K124]

layu layu (Qu.) (G.S.) [D1499]

Used as fodder (T.H., G.S.) and as tea (G.S.). Use unknown (G.P.).

***Trifolium amabile* H.B.K. var. *pentlandii* Ball**

Peru.

Tauca, 4000–4280 m. Above community.

layu (Qu.) [K228]

Use unknown (T.H.).

***Vicia andicola* H.B.K.**

Andes, Venezuela to Peru.

Q'era-pata, 3800 m. Herb in moist soil near Ashñapuquio spring (D1612).

Cuper, 3500–3900 m. Climbing herb on steep rocky slopes of Antakillqa hillside (D1684, D1666) and in quebrada above Puqpuq waterfall (D1469).

pavitos (Qu.) (N.C., B.G.) [D1612, D1666]

pawituscha (Qu.) (B.G.) [D1666]

puna pavitos (Qu.) (G.S.) [D1469]

pampa pavitos (Qu.) (G.S., L.P.) [D1612, D1684]

uña pawituscha (Qu., *uña*, 'little') (B.G.) [D1684]

pavititos (Qu.) (G.P.) [D1438, D1666]

Taken as a tea for cough (B.G., L.P., G.S.).

Leaves and stem can be chewed like coca (B.G.). G.P. commented that the plant is of no use, and that D1438 was the same as D1439 (*Lathyrus longipes*).

Vicia faba L.

Introduced crop plant, probably native to Southwest Asia.

Pukamarka, 3800 m. Herb cultivated in fields next to Lake Piuray.

habas blancas (Sp., *habas*, 'favas'; *blanca*, 'white') [K159]

Flowers white. Stems and fruits white (Jo.C.).

puka habas (Qu., *puka*, 'red'; local Sp., *habas*, 'favas') [K160]

Flowers white. Stem and fruits red (Jo.C.).
q'umir habas (Qu., *q'umir*, 'green'; local Sp., *habas*, 'favas') (Jo.C.) [K162]

Flowers white.

puquchun habas (Qu., *puquchun*, 'ripen!'; local Sp., *habas*, 'favas') [K166]

Flowers white. This variety produces greater quantity of large seeds (Jo.C.).
paluqu habas (Qu.; local Sp., *habas*, 'favas') (G.P.) [K167]

Flowers white. Plants shorter in stature than most other varieties.

Cuper, 3810 m. Herb cultivated in field on trailside.

habas (Sp., 'favas') [D1366]

This variety is planted after first heavy rain in November, harvested in May (G.P.).

Ayllu Punqu (K'aparay), 3800 m. Cultivated herb in fields in terraced, irrigated fields next to Lake Piuray.

q'umir habas (Qu., *q'umir*, 'green'; Sp., *habas*, 'favas') [K266]

Flowers cream.

Although an introduced cultigen, some quantity of *Vicia faba* is planted by all residents of Chinchero. Fresh *habas* are eaten in a variety of ways, including soups, stews, and mixed vegetable dishes. *Habas* are also dried for long-term storage, then eaten either after roasting over the fire in a ceramic "toasting pot" (Sp., *tostadera*) or after soaking and boiling, a form called *phuspha* (Qu.). Both forms are conveniently portable, wrapped in a small cloth (Qu., *unkhuña*) made for that purpose, and are often taken to eat while in the fields, walking, or traveling. As are tubers and maize kernels, *habas* are always peeled before eating. *Habas* are harvested (and dried if desired) as whole plants. Once dry, only the seeds are stored.

Vicia graminea Sm.

Mexico to Patagonia.

Cuper, approx. 3700 m. Vining herb on steep

pastured slopes of Antakillqa hillside, at place called Chaqchakillaychimpa.

puna pimpinilla (Qu., *puna*, 'high area'; from Sp. *pimpinella*, 'burnet') [F288B]
albergascha (Qu., from Sp. *arvejas*, 'peas') [F288B]

puna pawituscha (Qu.) alternate name [F288B]

pavitos [of some kind] suggested name [F272B]

Use unknown (T.L.).

LEMNACEAE

Lemna gibba L.

Widely distributed in both hemispheres.

Ayllu Punqu (K'aparay), 3800 m. Aquatic herb floating on shallow pools on terraced, irrigated area next to Lake Piuray.

Name and use unknown (T.H., G.S.) [K270A]

Lemna minuscula Herter

Widely distributed in New World.

Ayllu Punqu (K'aparay), 3800 m. Aquatic herb floating on shallow pools on terraced, irrigated area next to Lake Piuray.

Name and use unknown (T.H., G.S.) [K270B]

LILIACEAE

Anthericum eccremorrhizum Ruiz & Pavón

Ecuador and Peru.

Cuper, 3450–3840 m. Herb on rock ledge (K143), on steep rocky slopes of Antakillqa hillside (D1667), and on bank above Puqupuq waterfall (D1743).

khuchi khuchi (Qu., *khuchi*, 'pig') (S.J., G.P.) [D1667, D1743]

sara sara (Qu., *sara*, 'maize') (N.C., B.G., G.S.) [D1667, D1743]

Name and use not recorded [K143]

People play with the little roots of this plant and call them 'pigs' (S.J.). Use unknown (N.C., B.G., G.P., G.S.).

Anthericum herrerae Killip

Department of Cusco, Peru.

Yanacona, 3750–3800 m. In fallow fields and at place called Q'allas.

khuchi khuchi (Qu., *khuchi*, 'pig') (G.S.) [D1595]

Name unknown (M.H.) [D1595]

Name and use unknown [F257B]

The roots are said to resemble little pigs

being nursed by their mother (G.S.).
Plant is eaten by sheep (M.H.).

Nothoscordum andicola Kunth

Peru to Chile and Argentina.

Cuper, 3810 m. Herb in cracks of large eroded rock outcrop called Maranqaa in Inca ruins.

phuya phuya (Qu.) (G.P.) [D1389]

ch'uullkus (Qu.) alternate name (U.I., Al.Q.) [D1389]

pampa ch'uullku (Qu.) (G.S.) [D1389]

Roots are chopped and used like onions in cooking; people in Chacan (Calca) eat them frequently (G.P., Al.Q., G.S., U.I.). Bulb has strong odor of onion.

Nothoscordum fictile J. F. Macbr.

Southern Peru.

Yanacona, Wachuna (above Rajchi), 3750–3800 m. Low herb on moist pampa of fallow and cultivated fields.

puya puya (Qu.) [D1593, D1621]

A small variety (G.S.). Plant has no use (B.G., G.S.).

LINACEAE

Linum oligophyllum Willd.

Ecuador and Peru.

Cuper, 3360–3800 m. Short shrub along trail (D1430); low herb among grasses on steep slope at Puqpuq waterfall (D1800).

lluq'i llug'i (Qu.) (G.P.) [D1430]

Name and use unknown (G.S.) [D1430]

Name and use not recorded [D1800]

The entire plant is ground up and applied topically for back pain (G.P.).

LOASACEAE

Caiophora cirsiifolia Presl

Southern Peru.

Cuper, 3810 m. In cracks of large eroded rock.

puka t'ika khisa (Qu., *puka*, 'red'; *t'ika*, 'flower'; *khisa*, 'nettle') (N.C., A.Co.) [D1390]

The flower is made into a tea with other *ortigas* (Sp., 'nettles') as a treatment for measles (N.C.). The plant is rubbed on the head for headache.

Caiophora rosulata (Wedd.) Urban & Gilg

Southern Peru.

Cuper, 4500 m. Herb on summit of Antaki-llqa hill.

puka t'ikaq khisa (Qu., *puka*, 'red'; *t'ikaq*, 'flowered'; *khisa*, 'nettle') (G.A., L.P.) [D1706]

chunchu khisa (Qu., *chunchu*, 'jungle native') alternate name (B.G.) [D1706]

The plant is drunk as a tea (L.P.) for headache (G.A.). Tea made from the flower of this plant is drunk for ailments of the side (Sp., *costado*) (B.G.).

Caiophora stenocarpa Urban & Gilg

Southern Peru.

Cuper, 3370–3400 m., 3750 m. Herb on steep grazed rocky slopes, and vining among shrubby weeds on large sculptured rock outcrop called Chinkana.

puka t'ikayuq khisa (Qu., *puka*, 'red'; *t'ikayuq*, 'flowered'; *khisa*, 'nettle') [D1736]

puka t'ikaq khisan—china (Qu., *china*, 'female') [F265]

Name and use not recorded [D1779]

Flower used to make a purely cool (Sp., *fresco*) tea (S.J.). Use unknown (G.S.). D1736 said by G.S. to be a yellow-flowered class of 'red-flowered nettle' (Qu., *puka t'ikayuq khisa*). F265 said by G.S. to have no use, and to be female (Qu., *china*) because of its small flowers, hairs which are only mildly urticating, and vining rather than erect habit.

Loasa cuzcoensis Killip

Southern Peru (Department of Cusco).

Yanacona, 3800 m. Herb on rock wall near Albergue.

angel tawna (Sp.; Qu., *tawna*, 'cane') [D1673]

angel tawnin (Sp.; Qu., *tawnin*, 'cane') [D1673]

The entire plant is boiled as a tea to cure kidney ailments (G.S.) or made into a tea given to children (G.A.). It is also a cure for ailments of the side (Sp., *costado*) (N.C., B.G.).

Mentzelia fendleriana Urban & Gilg

Venezuela south to Bolivia.

Cuper, 3100–3150 m. Among large rocks on somewhat dry quebrada slope.

Urquillos, 3100 m. Along road at place called Erapata.

ayaq t'ikan (Qu., *ayaq*, 'corpse's'; *t'ikan*, 'flower') (S.J., G.S.) [F328]

Name and use unknown (B.G., Am.Q., P.P., G.S.) [K239]

Similar plant in lowlands is called *plan-cha plancha* (Sp., *plancha*, 'press') because its leaves stick to your pants (Am.Q., G.S.). Similar to *kiku* (Qu.) (B.G.). Use unknown (S.J., G.S.).

LOGANIACEAE

Buddleja coriacea Remy

Central Peru to Bolivia.

Tauca, 4050–4250 m. Tree around houses in community.

puna kiswar (Qu.) [D1576]

This tree is encouraged and protected for its decorative value and use as wood for fires and construction (L.H., M.H., G.S.).

Buddleja incana Ruiz & Pavón

Central and southern Peru.

Cuper, 3810 m. Tree in house courtyard.

kiswar (Qu.) [F372]

This tree is planted from cuttings; it grows very fast, and can be cut every two years for construction uses (M.C.).

MALVACEAE

Acaulimalva engleriana (Ulbrich) Krapov.

Peruvian Andes.

Cuper, 3700–3800 m. At edges of potato fields and in fallow fields on hillsides called Llaqtak'ata.

altea (from Spanish, 'Malva sp.') [F368]

Only the 'skin' (Qu., *qhara*, 'epidermis') of the roots is boiled to make a cool (Sp., *fresco*) tea to treat illnesses of heat (Sp., *calor*). The pith, which is said to be hot, is thrown away. Tea is also made with ground *habas* (*Vicia faba*).

Acaulimalva nubigena (Walp.) Krapov.

Peru to Argentina.

Tauca, 4000 m. Low herb in plowed field in puna.

Name and use unknown [F371]

Acaulimalva aff. rauhii (Hochr.) Krapov.

Peru (Junín, La Libertad and Cusco).

Cuper, 4500 m. Summit of Antakillqa hill.

altea (from Spanish, 'Malva sp.') [F287]

Only the skin (Qu., *qhara*, 'epidermis') of the roots is boiled to make a cool (Sp., *fresco*) tea to treat illnesses of

heat (Sp., *calor*). The pith, which is said to be hot, is thrown away. Tea is also made with ground *habas* (*Vicia faba*).

Malva parviflora L.

Cosmopolitan weed.

Cuper, 3800 m. Weedy herb in rich disturbed soil of old pigyard in courtyard of informant.

malvas (local Sp., *malva*, 'mallow')

[K206]

To treat liver problems and yellow fever, a rag is soaked in *malvas* extract and tied around the stomach (G.P.).

Nototriche aff. aristata A. W. Hill

Peru.

Tauca, 4200–4500 m. Locally common in small canyons and very wet areas.

Name and use unknown [F309]

Nototriche aff. epileuca A.W. Hill

Known from Departments of Cusco and Ancash, Peru.

Tauca, 5000 m. Low herb along trail in puna, near pass between Tauca and Calca.

altea (Sp., 'Malva sp.') [F362]

Use unknown (E.C., Au.Q., G.S., J.S.).

Nototriche longirostris (Wedd.) A. W. Hill

Central Peru to Bolivia.

Tauca, 4050 m. Herb in wet soil along brook around community.

Name and use unknown (M.H., G.S.) [D1583]

Use limited to forage for sheep and llamas (M.H.). Similar to *akakapisu* (Qu.) but lacks the characteristic smell of excrement (G.S.).

Nototriche aff. pearcei (E. G. Baker) A.W. Hill

Central and southern Peru.

Cuper, 4500 m. Low herb on slopes and on flat area on summit of Antakillqa hillside.

turphuy (Qu.) (G.P., L.P.) [D1725, F201]

turpay (Qu.) (G.S.) [F277, F286]

Name and use unknown (G.A.) [D1725]

Used to treat pain of kidneys and of the area around the waist (L.P.). Whole plant used to make a tea to treat cough (G.S.).

Urocarpidium shepardae (Johnston) Krapov.

Peru to Argentina.

Cuper, 3800 m. Weedy herb in rich disturbed

soil of old pigyard in courtyard of informant.

ruphu (Qu.) [K205]

Use limited to forage for pigs and other animals (G.P.).

Urocarpidium aff. shepardae (Johnston) Krapov.
Cusco, Peru.

Cuper, 3800 m. Weedy herb in rich disturbed soil of old pigyard in courtyard of informant.

ruphu (Qu.) [K207]

frutilla (Sp., 'strawberry' possible name (T.H.) [K207]

Use limited to forage for pigs and other animals (G.P.).

MELASTOMATACEAE

Brachyotum grisebachii Cogn.

Peru.

Cuper, altitude unknown. Steep slopes of Antakillqa hillside.

sangra sangra (Qu.) [F299]

No use recorded.

Brachyotum naudinii Triana

Peru.

Cuper, 4000–4400 m. Woody shrub on slopes of Antakillqa hillside, place called K'inqu. Plant grows almost to summit of hill.

masuk'a (Qu.) [F355]

No use except as firewood (S.L., T.L., G.S.)

MYRTACEAE

Eucalyptus globulus Labill.

Native of Australia. Introduced and widely planted in Latin America.

Cuper, 3810 m. Tree along trail.

eucalipto (Sp.), *eucalistu* (Qu.) [D1345]

Leaves are made into a tea for chest congestions (G.P.). The wood is used for construction, and the leaves and wood for fuel. Possibly used as a dye plant (G.A.). Seed capsules are sold in the Chinchero Sunday market to make tea to treat colds.

NYCTAGINACEAE

Colignonia weberbaueri Heimerl

Peruvian Andes.

Cuper, 3810 m. Small tree by trailside.

sach'a paraqay (Qu., *sach'a*, 'tree'; *paraqay*, a kind of maize having a white root) [D1363]

The entire plant is lightly boiled and used to wash hair, especially by women (L.P.).

Mirabilis prostrata (Ruiz & Pavón) Heimerl

Ecuador to Chile.

Cuper, 3100–3450 m. Herb at edge of maize plot (D1741), and in shade of shrubs in quebrada (K245).

Name and use unknown (Am.Q., S.J., P.P., G.S.) [D1741, K245]

manka p'aki (Qu., *manka*, 'pot'; *p'aki*, 'break') possible name (B.G.) [K245]

Yanacona, 3800 m. Herb at edge of potato plot along stream.

Name and use unknown (B.G., P.P., G.S.) [K134]

Similar to *muqu muqu* (Qu., *muqu*, 'knot'), which grows at lower altitudes, in its knotted stem; the entire *muqu muqu* plant is boiled to make a bath to treat fever (Am.Q., G.S.).

ONAGRACEAE

Epilobium denticulatum Ruiz & Pavón

Ecuador to Chile and Argentina.

Cuper, 3600 m. Herb in moist fen (D1406).

Tauca, 4050–4250 m. Herb on steep rocky slopes (D1520) and in moist soil along brook (D1586).

Yanacona, 3800 m. Herb on floating island of *Scirpus californicus* (D1640).

yawar ch'unqa (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck') (M.H., G.P.) [D1406, D1586, D1640]

mayu yawar ch'unqa (Qu., *mayu*, 'running water'; *yawar*, 'blood'; *ch'unqa*, 'suck') (L.H., M.H., G.S.) [D1520, D1586]

duraznillo (Sp., 'little peach') (B.G.) [D1640]

Although the name *yawar ch'unqa* is usually given to plants used to treat wounds, no use was known for this plant (G.P., L.H., M.H.). The plant is drunk as a tea (B.G.), made from the cortex (Sp., *cascara*) of the root (G.S.).

Fuchsia apetala Ruiz & Pavón

Southern Peru and Bolivia.

Cuper, 3450–4500 m. Lightly grazed slopes above Puqpuq waterfall and on summit of Antakillqa hill.

chhilin campanilla (Qu., *chhilin* is an on-

omotopoeia for the sound of a bell; Sp., *campanilla*, 'little bell') (G.A., B.G., L.P., G.S.) [D1509, D1704]

frutilla frutilla (Qu. from Sp., *frutilla*, 'strawberry') name given by children (A.Co., G.S.) [D1509]

The sweet red fruit is eaten by shepherd children (G.A., A.Co., B.G., L.P., G.S.); some of them liken it to a strawberry (A.Co., G.S.).

Tauca, 4050–4250 m. Steep rocky slopes.

waysillu (Qu.) [D1516]

chhilin campanilla (Qu., *chhilin* is an onomotopoeia for the sound of a bell; Sp., *campanilla*, 'little bell') (G.S.) [D1509, D1704]

Use unknown (L.H.). Fruit is eaten (G.S.).

Fuchsia boliviana Carr.

Native from southern Peru to northern Argentina; introduced and naturalized in Colombia and Venezuela and elsewhere.

Cuper, 3100 m. Moist maize plot in quebrada. *campanilla* (Sp., 'little bell') [K249]

Use unknown (G.P.).

Oenothera multicaulis Ruiz & Pavón

Ecuador to Bolivia.

Cuper, 3810 m. In cracks of large eroded rock.

yawar ch'unqa (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck') (G.P., G.S.) [D1377]

qhillu t'ika yawar ch'unqa (Qu., *qhillu*, 'yellow'; *t'ika*, 'flower'; *yawar*, 'blood'; *ch'unqa*, 'suck') (N.C.) [D1377]

The leaf is used to cure cuts and wounds (G.P.); it is ground and used as a poultice (G.S.). The root is used to make a tea for *inflamación* (Sp.) and drunkenness (N.C.), using only the outside layer (G.S.).

Tauca, 4050–4250 m. Steep rocky slopes.

yawar ch'unqa de las punas (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck'; Sp., 'of the puna') (G.S.) [D1519]

Although the name *yawar ch'unqa* is usually given to plants used to treat wounds, no use was known for this plant.

Oenothera rosea L'Her. ex Aiton

Southwestern United States to Peru and Bolivia.

Cuper, 3300–3500 m. Lightly grazed slopes on edge of potato plot (D1504) and in old rocky field by brook (D1817).

yawar ch'unqa (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck') (G.S.) [D1504]

Name and use unknown (A.Co.) [D1504]

verbena (Sp.) (B.G.) [D1817]

The name *yawar ch'unqa* is given to plants used to treat wounds; this plant (D1504) was said by G.S. to be a feral male form. Used as an external wash for headache (B.G.).

Oenothera versicolor Lehm.

Ecuador, Peru and Bolivia.

Tauca, 3900–4050. Around community and on edge of *Ullucus* field.

saya saya (Qu., *saya*, 'upright') (L.H.) [D1582, K179]

uqi qhura (Qu., *uqi*, 'gray'; *qhura*, 'herb') (M.H.) [D1582]

Name and use unknown (B.G., G.S.) [D1582, K179]

Use unknown (L.H.). In the family of *lakre lakre* (Qu.); a smaller version grows at higher elevations (G.S.). Sheep and burros eat it (M.H.).

ORCHIDACEAE

Aa matthewsii Reichb. f.

Ecuador to Bolivia.

Tauca, 4050–4250 m. Steep rocky slopes.

sara sara (Qu., *sara*, 'maize') [D1532]

Use unknown (L.H., G.S.).

Altensteinia elliptica C. Schweinf.

Southern Peru.

Cuper, 3450–3600 m. Lightly grazed slopes above Puqupuq waterfall and in thin soil on steep rock face.

sara sara (Qu., *sara*, 'maize') [D1653]

Name and use unknown (G.S.) [D1511]

No use known for this plant, the male (Sp., *macho*) form of D1714 (*Valeriana coarctata*) (G.P.).

Altensteinia fimbriata H.B.K.

Colombia to Bolivia.

Yanacona, 3750 m. Common in pockets of soil on large sculptured rock outcrop called Chinkana.

Name and use unknown [F347]

Chloraea reticulata Schltr.

Southern Peru to Argentina.

Cuper, 3450–3500 m. Terrestrial orchid on lightly grazed slopes above Puqupuq waterfall.

sara sara (Qu., *sara*, 'maize') possible name [D1507]
khuchi khuchi (Qu., *khuchi*, 'pig') possible name [D1507]
Use unknown (G.S.).

Chloraea undulata Raimondi ex Colunga
Central, western and southern Peru.
Cuper, 3100–3150 m. Terrestrial orchid on somewhat dry rocky slope along trail.
Name and use unknown (G.P.) [K240]

Cf. **Chloraea** sp.
Yanacona, 3750 m. Place called Q'allas.
Name and use unknown [F257A]
Plant was not known by anyone.

Epidendrum aff. **densifolium** Kränzlin
Peruvian Andes.
Cuper, 3330–3600 m. Terrestrial orchid on steep side hill and on wet rocks by brook.
kiyawcha, *urqu kiyawcha* (Qu., *urqu*, 'male') [D1450]
Name and use not recorded [D1804]
This variety was said to be male (Sp., *macho*; Qu., *urqu*) (S.J., G.S.). The female (Sp., *hembra*) form is drunk for thirst (S.J.). The juice of the stem can be sucked like that of maize stalks (locally called *caña*, Sp.), but is a little bitter (Au.Q.).

Malaxis excavata (Lindley) Kuntze
Mexico to Argentina.
Cuper, 3500–3700 m. Herb under grass on steep slope of Antakillqa hillside.
yerba de billarga (Sp., *yerba*, 'herb') (P.P.) [K290]
sara sara (Qu., *sara*, 'maize') (Am.Q., G.S.) [K290]
llanten llanten (Qu. from Sp., *llanten*, *Plantago* spp.) (B.G.) [K290]
Used to wash the backs of horses to cure saddlesores (P.P.). Use unknown (B.G., Am.Q., G.S.) or forgotten (S.J., C.R.).

Masdevallia sp.
Cuper, altitude unknown. Low herb tangled with fern and lycopodium.
Name and use unknown [F273]

Oncidium aff. **aureum** Lindley
Ecuador to Bolivia.
Cuper, 3600 m. Sterile terrestrial orchid on steep side hill.
kiyawcha (Qu.) (N.C., G.P., Au.Q.) D1449]

kawchi kawchi (Qu.) (A.Co.) [D1449]
This plant is a female (Sp., *hembra*) form; the pseudobulbs are good to eat for thirst when climbing the hillside where the plant grows; they are quite sweet, especially if put in the sun for a time before eating (A.Co., N.C., G.P., Au.Q.).

OXALIDACEAE

Hypseocharis bilobata Killip vel aff.
Southern Peru (Department of Cusco).
Cuper, 3810 m. Along trail.
lomo lomo (Qu.) [D1361]
There are multiple uses for the root boiled into tea: for stomachache (G.P.); for cough (E.C.); for constipation (G.A.); and as a tonic, after removing the epidermis of the root.

Oxalis peduncularis H.B.K. var. **pilosa** Hieron.
Cusco, Peru.
Cuper, 3700 m. Herb on steep bank.
ch'ullkus (Qu.) [D1412]
inca ch'ullkus (Qu.) [D1412]
Yanacona, 3750 m. Large sculptured rock outcrop called Chinkana.
inca chullqu (Qu.) [F262]
Like all *ch'ullkus*, this plant tastes somewhat bitter (Qu., *kaqki*) (G.S.). The stem and leaves are eaten by shepherds and young children (G.P., G.S.). The plant is cool (Sp., *fresco*) and its juice is used as a gargle to treat tonsillitis (Sp., *amigdalitis*) (G.S.).

Oxalis petrophila Knuth
Peruvian Andes.
Cuper, 3810 m. In rock wall.
oca oca (Qu., *oca*, *Oxalis tuberosa*) (S.J.) [D1373]
pampa oca oca (Qu., *pampa*, 'flat open space'; *oca*, *Oxalis tuberosa*) (S.J., G.S.) [D1373]
Taucra, 4050–4250 m. Forming dense colonies among rocks on steep slopes.
ch'ullku (Qu.) (L.H.) [D1545]
pampa ch'ullku (Qu., *pampa*, 'flat open space') possible name (G.S.) [D1545]
Children eat the leaves (S.J.). Use unknown (G.S., L.H.).

Oxalis steinbachii Knuth
Peru and Bolivia.

Cuper, 3450–3700 m. Herb on steep moist bank of quebrada above Puqupuq waterfall and along trail.

trago trago (Qu. from Sp., *trago*, ‘cane alcohol’) (A.Co., G.S.) [D1411, D1484]

Children suck juice out of flower, to drink (G.S.). Stem and leaves are also eaten by young children (G.P.). Gathered in quantity, it is boiled in the same way as *chicha* (Sp., ‘maize beer’) or added to it (G.S.).

***Oxalis tuberosa* Molina (fig. 33)**

Southern Venezuela to northern Argentina; Mexico. Herb cultivated for edible tuber. *Oca* is the Quechua name for this Andean cultigen.

Pukamarka, 3800 m. Herb cultivated for edible tuber in fields by Lake Piuray.

pawkar oca (Qu.) [K153]

Tubers and stem red (Jo.C.). Planted in September, harvested in June (Jo.C.). Petals yellow.

higos oca (Qu. from Sp., *higo*, ‘fig’) [K154]

The name refers to the fig-shaped tuber (Jo.C.). This variety is more productive than *pawkar oca* (K153) (Jo.C.).

Tauca, 3900 m. Cultivated in field for edible tubers.

oca (Qu.) [K231]

This variety is not good for making *khaya* (Qu., ‘freeze-dried *oca*’) (Jo.C.).

Ayllu Pungu (K’aparay), 3800 m. Cultivated in irrigated fields for edible tubers.

pawkar oca (Qu.) [K277]

***Oxalis* sp.**

Tauca, 4050 m. Herb in moist soil along bank.

trago trago (Sp., *trago*, ‘cane alcohol’) [D1580]

Plant is one of three classes of *Ch’ullkus*, which are all somewhat bitter and include: a yellow flower which grows on rocks; a *trago trago*; and an *oca ocacha* which grows on pampas (G.S.). The root is eaten for its juice, which is sweet and good; my daughter often eats it (G.S.).

***Oxalis* sp.**

Yanacona, 3750 m. Herb in fallow field along old dirt road across moist, flat, seasonally partially inundated pampa.

oca oca (Qu., *oca*, *Oxalis tuberosa*) [D1623]

ch’ullku (B.G.) [D1623]

Use unknown (B.G., G.P.).

***Oxalis* sp.**

Tauca, 4000–4200 m.

Name and use unknown (G.S.) [K194]

PAPAVERACEAE

***Argemone mexicana* L.**

Cosmopolitan weed, native of tropical America.

Cuper, 3100–3150 m. Herb among large rocks on somewhat dry slope in quebrada.

karwinchu (Qu.) (P.P.) [K250]

amapolas del campo (Sp., ‘field poppies’) (Am.Q., G.S.) [K250]

This very “hot” plant is dried whole, toasted, ground, and given to a cow that is too thin (P.P.). Flowers are said to be smoked by *gringos* (Sp., ‘foreigners’) in the Urubamba valley as a substitute for marijuana (Am.Q., G.S.). B.G. characterized the plant as a *khishqa* (Qu., ‘spiny plant’) eaten by cows.

PASSIFLORACEAE

***Passiflora gracilens* (Gray) Harms**

Central Peru to central Bolivia.

Cuper, 3400–3600 m. Vining over shrubs on steep hillside.

k’ita tintincha (Qu., *k’ita*, ‘feral’; *-cha*, ‘little’) (G.S.) [D1731]

tintincha (Qu.) (G.S.) [D1782]

Shepherd children eat the good-tasting fruit, called *k’ita trombos* (Qu.) (S.J., G.S.).

***Passiflora mixta* L.f.**

Venezuela to Bolivia.

Cuper, 3810 m. Cultivated vine in house garden.

tintin (Qu.) [D1398]

Flowers are worn in hats for the annual ritual of the first hoeing of the potato fields (S.J.). The fruits, called *trombos*, are eaten in March (S.J.).

***Passiflora pinnatistipula* Cav.**

Native to Peru or Chile, frequently cultivated or naturalized in the Andes from Colombia to Chile, 2500–3800 m.

Cuper, 3300–3450 m. Vining over shrub next to brook in quebrada.

granadillas (Sp., ‘passion fruits’) [D1753]



FIG. 33. *Oca*, *Oxalis tuberosa*, cultivated for edible tubers (photo S.K.).

The name refers to the fruits, which are sold in markets; they are useful as a remedy for coughs and lung problems (G.S.) and are also sold in the Cusco market (S.J.) and eaten fresh.

PIPERACEAE

Peperomia bicolor Sodiro
Ecuador and Peru.

Cuper, 3360 m. Herb on steep rock cliffs by Puqupuq waterfall.

Name and use not recorded [D1793]

Peperomia galioides H.B.K.

Widespread in tropical America.

Cuper, 3600 m.

kunquña (Qu.) [D1453]

The plant is boiled and gargled, or the leaves are chewed, to cure a tooth-

ache (G.S.). It is also boiled and used to wash the head (G.S.).

Peperomia peruviana (Miq.) Dahlst.

Colombia to Argentina.

Cuper, 3400–3600 m. Steep, rocky, shrubby hillside, grazed by sheep.

killaq papan (Qu., *killaq*, ‘moon’s; *papa*, ‘potato’) (G.S.) [D1729, D1781]

intiq papan (Qu., *intiq*, ‘sun’s; *papa*, ‘potato’) (G.S.) [D1729, D1781]

inti-killaq papa (Qu., *inti*, ‘sun’; *killaq*, ‘moon’; *papa*, ‘potato’) (S.J.) [D1729]

The Quechua name of the plant is variable; its round tubers are not edible and no other use is known (S.J., G.S.).

Peperomia verruculosa Dahlst. ex Hill

Andes of central and southern Peru.

Cuper, 3810 m. In cracks of large eroded rock.

intiq papan (Qu., *intiq*, ‘sun’s; *papa*, ‘potato’) [D1385]

killaq papan (Qu., *killaq*, ‘moon’s; *papa*, ‘potato’) [D1385]

intiq-killaq papan (Qu., *intiq*, ‘sun’s; *killaq*, ‘moon’s; *papa*, ‘potato’) [D1385]

Pigs eat the small round tubers (G.S., G.P.). The Quechua names are interchangeable; they refer to the plant’s round (sun- and moon-shaped) leaves (G.S.).

Peperomia sp.

Cuper, 3400 m. Herb among shrubs on steep rocky slope above waterfall.

kunquña (Qu.) [D1785]

Use unknown (G.S.).

PLANTAGINACEAE

Bougueria nubicola Decne.

Central Peru to Bolivia.

Tauca, 4000–5000 m.

Name and use unknown (E.C., B.G., O.H., Au.Q., G.S., J.S.) [K220, F366]

Similar to *qhitu qhitu* (Qu.), *pilli* (Qu.) (B.G.). F366 was not recognized by anyone as a plant they had ever seen before.

Plantago australis Lam. ssp. **pseudomollior** Rahn
Peruvian Andes.

Cuper, 3810–4500 m. Along trail and on summit of Antakillqa hill.

wakaq khallun (Qu. from Sp., *wakaq*, ‘cow’s; Qu., *khallun*, ‘tongue’) (G.A., G.P., L.P., G.S.) [D1355, D1720]

A tea is made from the whole plant, with care to include the root, to treat *in-flamación* (Sp.) (G.A.). It is used for pain of the kidneys and waist area (L.P.) and is eaten by animals (G.P.). The plant is sold in the Chinchero Sunday market.

Plantago lamprophylla Pilger

Central and southern Peru.

Cuper, 4500 m. Summit of Antakillqa hill.

ichu ichu (Qu., *ichu*, ‘various high-altitude grass spp.’) [D1715]

A tea for coughs is made from the entire plant (G.A.).

Plantago major L.

Native to Europe and North and Central Asia; widely distributed.

llantén (Sp.) not collected

Sold in the Chinchero Sunday market for tea.

PLUMBAGINACEAE

Plumbago coerulea H.B.K.

Colombia to Chile and Argentina.

Pirqa Kachun, 3000–3300 m.

ásul ñuqchu (Sp., *azul*, ‘blue’; Qu.) [K309A]

The plant is burned; the ash is then powdered and made into *llipta* (Qu., ‘admixture for coca chewing’) (P.P., C.R.).

POLEMONIACEAE

Cantua buxifolia Juss. ex Lam.

Central Peru to Bolivia.

Yanacona, 3810 m. Planted to decorate areas around building.

qantu (Qu.) (G.P.) [D1515]

Cuper, 3810 m. On terraces of Inca ruins.

Name and use not recorded [K216]

Tauca, 4050 m. In community center.

qhillu qantu (Qu., *qhillu*, ‘yellow’) (M.H., G.S.) [D1584]

qantu (Qu.) (L.G., M.H.) [D1585]

puka qantu (Qu., *puka*, ‘red’) (G.S.) [D1585]

This decorative plant, the national flower of Peru, is often grown in household yards. The flowers are used to make New Year’s decorations over doors of houses, burial wreaths, and other ornaments. At a child’s funeral, *qan-*

tu flowers are filled with holy water and placed on a cross, which is carried in the funeral procession and then placed on the grave, so that the water sustains the child during the journey after death. Children play "funeral" or other games with them (L.G., M.H., G.S.).

POLYGALACEAE

Monnina amarella Chodat

Central and southern Peru.

Cuper, 3500 m. On steep slope leading to creek.

sambho quluta (Qu., *sambho*, 'black'; *quluta*, 'egg') (G.S.) [D1429]

Use unknown (G.S.).

Pirqa Kachun, 3000–3300 m. On dry open hillside.

Name and use unknown (Am.Q., B.G., U.I., P.P., C.R., G.S.) [K300]

POLYGONACEAE

Muehlenbeckia vulcanica (Benth.) Endl.

Ecuador to Bolivia.

Cuper, 3810 m. Along trail.

mullaka (Qu.) (N.C., G.P., G.S.) [D1349]

The plant is used as a wash with *ch'ullkus* (*Nothoscordum andicola*) to cure white sores on a nursing baby's mouth, a condition due to 'heat' (Sp., *calor*) of the breast milk, caused by the mother's intoxication or spending too much time in the sun (N.C.). The root is made into tea for the kidneys and liver (G.P.).

Rumex crispus L.

Cosmopolitan weed of European origin.

Cuper, 3600 m. Weedy herb in wet field along trail.

llaqhi (Qu.) (N.C.) [D1456]

aselgas or *k'ita aselgas* (local Sp., from *acelga*, 'celery'; Qu., *k'ita*, 'feral') (N.C., G.S.) [D1456]

Eaten by cows and sheep (N.C.). Young, tender leaves of this weed are eaten in salad, or cooked as greens (G.S.).

Rumex cuneifolius Campdera

Peru to Chile, Argentina and Uruguay.

Cuper, 3810 m. Weedy herb along trail.

llaqhi (Qu.) [D1372]

Root drunk in tea to treat kidney problems (G.P.).

PORTULACACEAE

Calandrinia acaulis H.B.K.

Central Peru to Bolivia.

Tauca, 4050–4500 m. Steep rocky slopes and high puna grazed by llamas.

aqha qupisun (Qu., *aqha*, 'maize beer') (L.H.) [D1579]

oca qupisun (Qu., *oca*, *Oxalis tuberosa*) (G.S.) [D1579, F311]

kapisun (Qu.) (M.H.) [D1579]

The plant has no uses, but pigs love to eat it, especially the root (L.H., M.H.). Between April and June, the root, which grows in the *pampas* (Qu., 'flat areas') and *alturas* (Sp., 'heights') of Tauca, is collected and eaten (G.S.). The skin of the root must be peeled, but if left in the sun a short while, the root is very sweet like *oca* (Qu., *Oxalis tuberosa*) (G.S.).

Calandrinia alba (Ruiz & Pavón) DC.

Southern Peru.

Pukamarka, 3800 m. Weed in cultivated fields by Lake Piuray.

pampa clavel (Qu., *pampa*, 'flat open space'; Sp., *clavel*, 'carnation') (G.S.) [D1598]

yawar ch'unqa (Qu., *yawar*, 'blood'; *ch'unqa*, 'to suck') (M.H.) [D1598]

Use unknown (G.S.). Used to make a 'cool' (Sp., *fresco*) tea for diseases of 'heat' (Sp., *calor*) (M.H.).

Calandrinia ciliata (Ruiz & Pavón) DC.

Peruvian Andes.

Pukamarka, 3800 m. Weed in cultivated fields by Lake Piuray.

pampa clavel (Qu., *pampa*, 'flat open space'; Sp., *clavel*, 'carnation') (G.S.) [D1596, D1597]

qhurachata (Qu., 'some kind of a little herb') (M.H.) [D1597]

Name and use unknown (M.H.) [D1596]

Use unknown (M.H., G.S.).

RANUNCULACEAE

Anemone decapetala Ard. var. *foliolosa* Eichler

Peru to Chile and Argentina, southern Brazil, Uruguay.

Cuper, 3500–3600 m. Herb among rocks on steep, grassy, somewhat scrubby slopes of Antakillqa hillside.

Name and use unknown (G.A., N.C., B.G.) [D1644, F269]

Anemone helleborifolia DC.

Peru to Chile.

Cuper, 3800 m. Common herb on steep slope above creek on Antakillqa hillside.

chili chili (Qu.) [D1460]

Name and use unknown (G.S.) [D1460]

Drunk as tea for *inflamación* (Sp., 'heart-burn') caused by drinking too much cane alcohol (Sp., *trago*) (B.G.).

Clematis seemannii Kuntze

Peru and Bolivia.

Cuper, 3600–3900 m. At edge of field on Antakillqa hillside.

piris piris (Qu.) [D1687]

Name and use unknown (G.A.) [D1687]

Plant has no use because of its foul smell (L.P.).

Ranunculus breviscapus DC.

Peruvian Andes.

Tauca, 4050 m. Creeping in moist soil along brook in community center.

Cuper (Huancapata), 3850 m. Herb in moist soil along seepage area beside trail.

matiqllu (Qu.) (G.S., G.P.) [D1573, K175]

boton boton (Qu. from Sp., *botón*, 'button' or 'bud') possible name (G.P.) [K175]

pampa tayanqa (Qu., *pampa*, 'flat open area') possible name (G.S.) [D1573]

Used as a poultice for toothache (G.S.).

Use unknown (G.P.).

Ranunculus geranioides H.B.K. ex DC.

Colombia and Venezuela south to Peru.

Yanacona, 3750 m. At place called Q'allas.

Name and use unknown [F255]

Ranunculus praemorsus H.B.K. ex DC. var. *praemorsus*

Colombia to Bolivia.

Q'erapata (Ashñapuquyu), 3800 m. Herb around seepage area.

ashñaq qhura (Qu., *ashñaq*, 'smelly'; *qhura*, 'herb') (Au.Q.) [D1614]

kiku (Qu.) (N.C., B.G.) [D1614]

Use unknown (N.C., B.G., Au.Q.).

Cuper, 4500 m. Summit of Antakillqa hill.

kiku (Qu.) (L.P., G.S.) [D1728]

Said to be female (Qu., *china*) (L.P.) and possibly to provide a yellow dye (G.S.).

Tauca, 3900 m. Herb along trail in community.

Name and use unknown (G.S.) [K178]

Similar to *frutilla* (pronounced *phutulla*); use unknown (B.G.).

Ranunculus repens L.

Widely distributed.

Tauca, 3900 m. In springs around community center.

Name and use unknown (Je.C., G.S.)

[F313]

Thalictrum decipiens Boivin

Peru, Bolivia, and Argentina.

Cuper, 3450–3550 m. Herb along stream in quebrada above Puqpuq waterfall.

chiri chiri (Qu., *chiri*, 'cold') (A.Co.)

[D1490]

Name and use unknown (G.S.) [D1490]

Ayllu Punqu, 3800 m. Herb at edge of ravine along stream.

urqu ñuñupunqa (Qu., *urqu*, 'hill'; *ñuñu*, 'breast') (Am.Q.) [K138]

culantro pusan (Qu., Sp. from *cilantro*, 'coriander') (B.G.) [K138]

Name and use unknown (P.P., G.S.) [K138]

A variety of names and uses were reported for this plant. *Urqu ñuñupunqa* is considered to be a dangerous purgative and so is never used (Am.Q.). The entire plant is boiled to make a bath for fever; at lower altitudes it is known as *muqu muqu* (Qu., *muqu*, 'knot' or 'joint') (G.S.). The other names are associated with no use, except being eaten by sheep (A.Co., B.G.).

Thalictrum podocarpum H.B.K. ex DC.

Venezuela to Bolivia.

Cuper, 3450 m. In moist soil by Puqpuq waterfall.

trebol de la quebrada (Sp., 'canyon clover') [D1739]

A tea made from the entire plant is given to people when they turn yellow with jaundice 'to make their blood increase' (B.G., S.J.).

RHAMNACEAE

Colletia spinosissima Gmelin

Peru to Chile, Argentina, Uruguay.

Ch'ussu, 3800 m. On top of stone wall.

ruk'i (Qu.) (T.H., U.I.) [K279]

A bath is made from this plant to bathe children who suffer from fright (Sp., *susto*) (U.I.). For example, a boy had broken his arm; it had been set in a cast, but his mother said that he had

not yet been cured of the fright of the accident. She had collected a pile of *Colletia* to use to bathe him. In all our plant collecting in Chinchero, this wild plant occasioned our only dispute with residents. A woman nearby claimed ownership of the plant and was enraged by our cutting it, pointing out that the plant was important to them and could be of no possible use to us, so that we were not only stealing it, but also wasting it. The conflict was not resolved. The plant can also be used for firewood (T.H.).

ROSACEAE

Acaena elongata L.

Mexico to Peru.

Cuper, 3330 m. Steep wet rocks by brook in quebrada.

Name and use not recorded [D1813]

Fragaria vesca L.

Native of Eurasia, cultivated in many regions.

Cuper, 3600 m. Wild herb along trail.

frutilla, *k'ita frutilla* (Sp., *frutilla*, 'strawberry'; Qu., *k'ita*, 'feral') [D1437]

Fruit can be eaten (G.P.).

Hesperomeles lanuginosa Ruiz & Pavón ex Hook. Colombia to Bolivia.

Cuper, 3500–3600 m. Shrub on steep, rocky slopes of Antakillqa hill.

lluttu lluttu (Qu.) (B.G.) [D1663]

unka unka (Qu.) (G.P.) [D1663]

sullullumay (Qu.) (G.A.) [D1663]

Useful as firewood (B.G.). Not edible, has no use (G.A.).

Kakeneckia lanceolata Ruiz & Pavón

Peru and Bolivia.

Cuper, 3450–3600 m. Shrub on steep slope.

lluki (Qu., 'bitter' or 'strong') (G.P., G.S.) [D1494, D1662]

tayankha (Qu.) (A.Ca., B.G.) [D1494, D1662]

pata pata pasto (Qu.; Sp., *pasto*, 'pasturage') (G.S.) [D1494]

chilka (Qu.) (N.C.) [D1662]

macha macha (Qu.) (G.A.) [D1662]

The strong stem of the plant is used for firewood (B.G., G.P., G.S.). Useful to dye yellow (A.Ca.). Use unknown

(N.C., G.P.). Red berries are very good to eat and are 'intoxicating' (Qu., *machakunapag*) (G.A.).

Lachemilla diplophylla (Diels) Rothm.

Southern Peru, Bolivia.

Tauca, 4500 m. Aquatic herb at edges of shallow temporary pools in very high puna.

Name and use unknown (Je.C., G.S.)

[F310]

Malus sylvestris Miller

Native of Eurasia. Cultivated in all temperate regions.

Cuper, 3300 m. Tree at edge of maize garden in quebrada.

manzana (Sp., 'apple') [D1762]

Fruit are eaten (G.P.).

Margyricarpus strictus (Poeppig) J. F. Macbr.

Peru, Bolivia, and Chile.

Cuper, altitude unknown. Low spreading herb on Antakillqa hillside, place called Ch'akipuquyu.

kanlli (Qu.) [F320]

Useful as firewood, as it hardly needs drying; plant has no other use (S.J., G.S.). Specimen was compared to F307, *Senecio spinosus*.

Polylepis besseri Hieron.

Southern Peru to southern Bolivia.

Tauca, 4050 m. Small tree along fencerows around community.

qiyuña (Qu.) (L.H., G.S.) [D1578]

Wood used for housebuilding and for firewood (G.S., M.H.). This plant, as well as *kiswar* (*Buddleja* spp.) and *sauk'u* (*Sambucus peruviana*), were characterized as 'Inca plants' (plants said to have been known and useful to the Incas).

Polylepis incana H.B.K.

Central Ecuador to southern Peru.

Cuper, 3450–3810 m. Tree along trail and on steep rocky slopes in quebrada.

qiyuña (Qu.) [D1359, D1466]

Name and use unknown (A.Co.) [D1466]

Wood used for firewood and house construction. Said to have been used by the Incas for building houses (G.P., G.S.).

Prunus persica (L.) Batsch

Native of China. Cultivated in most tem-

perate regions. Sometimes escaped in Peru.

Cuper, 3300 m. Tree at edge of garden in quebrada.

durazno (Sp., 'peach') [D1761]

Fruit are eaten (G.P.).

***Prunus serotina* ssp. *capuli* (Cav.) McVaugh**

Native of Mexico. Cultivated and escaped in the Andes.

Ayllu Punqu, 3800 m. Tree encouraged to grow in houseyards and along roads and fields at shallow Lake Punqulay.

capulí (Qu.) [D1637]

Edible fruit, a kind of cherry, are gathered in quantity to be eaten and sold in markets. In order to treat problems caused by contact with 'wind' (Qu., *wayra*), the leaves are passed through fire, then brushed on face (B.G.).

RUBIACEAE

***Acrytophyllum thymifolium* (Ruiz & Pavón) Standley**

Colombia to Peru.

Cuper, 3450–3550 m. Shrub on steep bank in quebrada.

suka rura (Qu., *suka*, 'dust devil'; *rura*, 'fruit'? or from Sp. *ruda*?) (G.P.) [D1465]

pinku pinku (Qu.) (B.G.) [D1465]

Pirqa Kachun, 3000–3300 m. Erect in dense mat on side of trail.

maych'a maych'a qhura (Qu., *qhura*, 'herb') (B.G.) [K299]

Name and use unknown (S.J., Am.Q., P.P., C.R., G.S.) [K299]

Although five informants (S.J., Am.Q., P.P., C.R., G.S.) reported no use for this plant, others suggested that the plant is warmed in wine which is drunk to treat blows to the body (B.G.), and used to treat sore feet (G.P.).

***Galium aparine* L.**

Widely distributed in temperate regions of North and South America and Europe.

Cuper, 3810 m. Herb, scandent on other plants in cracks of large eroded rock called Maranqaqa.

rata rata (Qu.) [D1388]

Use unknown (G.P., G.S.).

***Galium weberbaueri* Krause**

Peruvian Andes.

Cuper, 3500–3600 m. Herb forming tangled mass among shrubs on steep rocky slopes.

rata rata (Qu.) [D1451, D1642]

pisq'u sisaq (Qu.) [D1642]

Leaves used to make tea, and to make a tonic (Sp., *refresco*) for children (G.S.). When a child's tongue turns white, *rata rata* is helpful if crushed and rubbed on the tongue (G.S.). Called *rata rata* because it grabs and sticks to clothes (G.S.). Called *pisq'u sisaq* because of the flower's five white petals (B.G.). It is ground and rubbed on the eyes for eye problems (N.C., B.G.).

***Relbunium croceum* (Ruiz & Pavón) Schumann ssp. *involucratum* (H.B.K.) Ehrend.**

Colombia to Chile and Argentina.

Cuper, 3810 m. Herb in cracks of large eroded rock called Maranqaqa.

rata rata (Qu.) (G.P., G.S.) [D1386]

Yanacona, 3800 m. Among rocks and in hard-packed soil on dry pastured slopes. Also among mosses in and around potato plots along stream below Inca ruins.

durazno durazno (Qu. from Sp., *durazno*, 'peach') (G.S.) [K133, K139]

paya paya qhura (Qu., *paya*, 'little old lady'; *qhura*, 'herb') possible name [K133]

The little fruit looks like a tiny peach (G.S.). Use unknown (G.P., G.S.).

RUTACEAE

***Ruta graveolens* L.**

Native of southern Europe. Widely cultivated throughout Latin America.

Cuper, 3810 m. Cultivated in house gardens.

ruda (Sp., 'rue') [D1395, K101, K102]

Male and female forms of *ruda* are recognized in Chinchero; female *ruda* plants have flowers while male plants do not. K101 was said by G.S., A.H. and others to be a female (Qu., *china*) plant, K102 a male (Qu., *urqu*). This widely used herb is sold in the Chinchero and Cusco markets. It is employed against ills brought on by the 'wind' (Sp., *mal viento*; Qu., *wayra*) (N.C., G.S.). For instance, a little *ruda* is roasted in a candle, then rubbed on a person whom the wind has passed over, especially one-month-old infants (N.C.). If a bad

wind has caused bumps on the skin, *ruda* boiled in alcohol is rubbed over the skin (S.J.). Market-vendors brush branches of *ruda* over their wares to insure good luck in sales (G.S.). A pot of *ruda* is grown in many house-yards to protect them from an un-defined evil, or from witchcraft (Qu., *layka*) (G.S.). It is said to be drunk with milk to cause abortion (N.C.). It is also used as a fragrant herb in cooking soup (G.S.). The plant has no Quechua name.

SANTALACEAE

Quinchamalium procumbens Ruiz & Pavón

Peru and Bolivia.

Cuper, 3450–3500 m. Forming a tangled mass on rocks on lightly grazed slopes.

Pirqa Kachun, 3000–3300 m. In shade of shrubs along trail.

Name and use unknown (B.G., M.H., Am.Q., P.P., G.S.) [D1599, K302]
piki piki qhura (Qu., *piki*, 'flea'; *qhura*, 'herb') possible name (C.R.) [K302]

Chinchamali in Chinchero refers to another well-known plant, *Krameria lappacea*. At least six informants examined these specimens without being able to suggest a name or use. G.S. said that he had not seen it before; B.G. suggested that it might be similar to *romero* (Sp., 'rosemary').

SAPINDACEAE

Cardiospermum halicacabrum L.

Widely distributed in the tropics.

Pirqa Kachun, 3000–3300 m. Vining plant on shrub along trail.

suq'a rura (Qu., *suq'a*, 'devil'; *rura*, 'fruit'? or from Sp. *ruda*?) [K307]

Name and use unknown (B.G., Am.Q., P.P., G.S.) [K307]

The stem, leaves, and flowers (parts of the plant which grow above ground) are boiled and cooled, then used for baths for coldness, fever, and other problems (C.R.). Fruit edible (Am.Q.). Fruit not edible (G.S.).

SAXIFRAGACEAE

Escallonia myrtilloides L.f. var. *myrtilloides*

Venezuela to Bolivia.

Cuper, 3500–3900 m. Shrub on steep rocky slopes of Antakillqa hillside.

t'asta (Qu.) (N.C., B.G., G.P., L.P.) [D1665, D1692]

Use unknown (N.C., B.G., G.P.). Flexible stems used for making baskets (L.P.).

Escallonia resinosa (Ruiz & Pavón) Pers.

Peru to Bolivia.

Cuper, 3800 m. Shrub in very moist creek draw.

chachaquima (Qu.) [D1461]

The wood of this tree is used for construction and firewood, and to make shed swords for weaving (G.S.). The young shoots are utilized to make baskets (Qu., *taqi*) that are used for storing dried potatoes (Qu., *ch'uñu*) (G.S.). This tree never flowers (G.P.) (fig. 34).

Ribes brachybotrys (Wedd.) Jancz.

Southern Peru and Bolivia.

Taucca, 3900 m. Bush on trail in community.

Name and use unknown (G.S.) [K177]

anis (Sp., 'anise') (T.H.) [K177]

macha macha (Qu.) (B.G.) [K177]

After eating something cold in the countryside, people chew this plant, as they would coca (T.H.). Children eat the sweet edible berries (B.G.).

Saxifraga magellanica Poirét

Colombia through the Andes to Patagonia.

Cuper, 4500 m. Herb in lush moist site on protected underside of rock and at edge of lake on summit of Antakillqa hill.

salli pupuha (Qu.) [D1721]

Name unknown [F278]

Used for stomach pain (G.A.). Tea used for lung problems (G.A.). Forage for llamas.

Taucca, 4000–4200 m. In dense clumps pend-ent on overhanging rock ledges and on vertical rock faces along steep trail.

Name and use unknown (B.G., U.I.) [K188, F370]

A useless herb (Qu., *qhura*), like *phutilla phutilla* (Qu., from Sp. *frutilla*, 'strawberry') (B.G.).

SCROPHULARIACEAE

Alonsoa meridionalis (L.f.) Kuntze

Mexico to Chile following the Cordillera.



FIG. 34. The tools used to cultivate tubers are locally made, especially of *chachaquma* (*Escallonia resinosa*); plow (usually *Eucalyptus*), *kutiq* (hoe and potato hook), *qhasuna* (clod-breaker), and *chakitaqlla* (footplow) (photo C.S.).

Cuper, 3600 m. Scandent herb on rock walls.
ayaq t'ika (Qu., *ayaq*, 'corpse's'; *t'ika*, 'flower') (G.P.) [D1405]
sagraq ñuqchu (Qu., *sagraq*, 'devil's') alternate name (G.S.) [D1405]
ashñaq ñuqchu (Qu., *ashñaq*, 'smelly') alternate name (G.S.) [D1405]
 No use reported (G.P., G.S.).

Bartsia bartsoides (Hook.) Edwin

Central and southern Andes, Peru to Chile.
 Taucsa, 4000–4200 m. Abundant on cliff faces.

Name and use unknown (G.S.) [K183]
qhitu qhitu [of some kind], possibly *hatun qhitu* (Qu., *hatun*, 'big') (B.G.) [K183]
 Drunk in warm water (B.G.).

Bartsia aff. bartsoides (Hook.) Edwin

Central and southern Andes, Peru to Chile.
 Cuper, 3500–3900 m. Herb on steep dry slope among grasses.
lagre, lakre lakre (Qu., from Sp. *lacre*, 'red') [D1657, D1683]

- misa ñuqchu* (Qu.) (N.C., B.G.) [D1657, D1683]
 D1657 was said by G.P. to be male (Sp., *macho*) and to have no uses, though the female plant did. The red part of the flower is used to make a tea to treat menstrual complaints (L.P.). Flowers only steeped to make a tea for fever and ailments of the 'side' (Sp., *costado*) (B.G.).
- Bartsia diffusa** Benth.
 Southern Peru.
 Cuper, 4500 m. Summit of Antakillqa hill.
lakre, lakre lakre (Qu. from Sp., *lacre*, 'red') (G.A., G.S.) [D1713]
 Taken as tea for excessive bleeding during period (G.A.).
 Taucca, 4050–4250 m. Steep rocky slopes.
pampa lakre lakre (Qu., *pampa*, 'flat open place') (L.H.) [D1531]
 Name and use unknown (G.S.) [D1531]
 Use unspecified (L.H.). This species is one of many useful plants with the name *lakre lakre* (L.H., G.S.).
- Bartsia inaequalis** Benth.
 Ecuador to Bolivia.
 Taucca, 4050–4250 m. Steep rocky slopes.
lakre lakre (Qu., from Sp. *lacre*, 'red') [D1553]
 Use unknown (L.H., G.S.).
- Bartsia thiantha** Diels
 Peru (Department of Cusco).
 Yanacona, 3800 m. Hillside called Titiqachimpa.
urqu lakre (Qu., from Sp. *lacre*, 'red') possible name [F258]
 Use unknown.
- Bartsia** sp., prob. nov.
 Cuper, 3450–3810 m. On lightly grazed slopes above Puqpuq waterfall (D1510) and along trail (D1370).
suytu qhura (Qu., *suytu*, 'long and pointed'; *qhura*, 'herb') suggested name (G.P.) [D1370]
hanq'as (Qu.) suggested name (Al.Q.) [D1370]
saqraq ñuqchu (Qu., *saqraq*, 'devil's') (G.S.) [D1510]
 Use unknown (G.P., Al.Q., G.S.).
- Calceolaria scapiflora** (Ruiz & Pavón) Benth.
 Southern Peru.
 Taucca, 5000 m. Area of border between
- Taucca and Calca. Erect herb on vertical rock faces.
zapatillas [of some kind] (Sp., 'slippers') [F361]
 Use unknown.
- Calceolaria sparsiflora** Kuntze
 Peru (Department of Cusco).
 Cuper, 3810 m. Along trail.
zapatillas (Sp., 'slippers') (N.C., G.S.) [D1340]
 Q'erapata, 3810 m. Shrub from cracks in rock.
ch'iñi phuytu (Qu., *ch'iñi*, 'very small'; *phuytu*, 'rhomboid') (B.G., G.S.) [D1603]
 Plant has no use (G.S.). *Phuytu* varies to *phurutu* (B.G.).
- Calceolaria tripartita** Ruiz & Pavón
 Along the cordillera from Mexico to Chile; Jamaica.
 Cuper, 3800 m. Shrub in moist site.
zapatillas (Sp., 'slippers') (G.P.) [D1441]
 Name and use unknown (G.S.) [D1441]
 Ch'usso, 3800 m. In small creek.
mayu zapatillas (Qu., *mayu*, 'running water'; Sp., *zapatillas*, 'slippers') (U.I.) [K275]
 Use unknown (G.P., G.S., U.I.).
- Castilleja fissifolia** L.f.
 Venezuela to Peru.
 Cuper, 3450–3550 m. Herb on steep grassy slope.
ñuqchu [of some kind] (Qu.) suggested possible name (G.S.) [D1470]
 Name and use unknown (A.Co.) [D1470]
 Use unknown (G.S.).
- Castilleja pseudopallescens** Edwin
 Southern Peru.
 Cuper, 3100 m. Erect herb along trail.
duraznillo (Sp.) suggested name (B.G.) [K319]
 Name and use unknown (Am.Q., P.P., G.S.) [K319]
 Use unknown (B.G.).
- Castilleja pumila** (Benth.) Wedd. ex Herrera
 Ecuador to northern Chile and Argentina.
 Cuper, 3810–4500 m. Herb in cracks of large eroded rock called Maranqaqa (D1393) and on summit of Antakillqa hill (D1716).
 Taucca, 4050 m. Herb in moist soil near brook (D1588).
puma mikhurana (Qu. from Sp., *mejorana*, 'marjoram') (L.P.) [D1716]

lakre lakre (Qu. from Sp., *lacre*, 'red') (G.P., G.S.) [D1393, D1588]

trago trago (Qu. from Sp., *trago*, 'cane alcohol') (G.A.) [D1716]

Name and use unknown (G.S.) [D1393]

Tea made from entire plant is drunk to counteract *soroche* (Sp., 'altitude sickness') when going to high altitudes (G.P.). Flowers sucked for nectar (G.A., L.P.). Use unknown (G.S.).

***Castilleja virgata* Dombey ex Wedd.**

Central Ecuador to Bolivia.

Tauca, 4050–4250 m. Steep rocky slopes.

lakre lakre (Qu. from Sp., *lacre*, 'red') (G.S.) [D1559]

puka t'ika lakre lakre (Qu., *puka*, 'red'; *t'ika*, 'flower'; Sp., *lacre*, 'red') (M.H.) [D1559]

Used to treat *desmantu* (Qu. from Sp., *desmandado*), a form of lower back pain (M.H.). Use unknown (G.S.).

***Mimulus glabratus* H.B.K.**

Central United States south through the mountains to Argentina.

Q'erapata (Ashñapuy), 3800 m. Herb in wet seepage area (D1611).

Cuper, 3600 m. Herb in fen (D1409).

uqururu (Qu.) [D1409, D1611]

The leaves, like *berros* (Sp., 'watercress'), are eaten raw in salads (N.C., B.G., G.S.) with lots of salt and a little oil. They can also be ground in fruit juice and drunk as a tonic (Sp., *refresco*), to treat a hangover, among other ailments (N.C.). They are sold in the Cusco market.

***Penstemon gentianoides* (H.B.K.) Poir.**

Native of Mexico and Guatemala. Introduced as ornamental.

Cuper, 3810 m. Cultivated plant in houseyard garden.

cartucho (Sp., 'cartridge') [K106]

Flower of this cultivated plant is used for decoration (G.S.).

***Veronica peregrina* L.**

Widespread in Northern Hemisphere and mountains of South America.

Ayllu Punqu (K'aparay), 3800 m. Herb in wet soil in old field by Lake Piuray.

Name and use unknown (G.S.) [K268]

***Veronica persica* Poir.**

Native of southwest Asia. Naturalized in

North America; south through the cordilleras and temperate parts of South America.

Cuper, 3810 m. Herb in pasture along trail.

puma mikhurana (Qu. *mikhurana* from Sp., *mejorana*, 'marjoram') (G.P.) [D1344]

pampa mikhurana (Qu., *pampa*, 'flat, low-growing'; *mikhurana* from Sp., *mejorana*, 'marjoram') (C.Q.) [D1344]

Entire plant and root is boiled, and the tea is drunk to relieve pain during childbirth (G.P.). Use unknown (C.Q.).

SOLANACEAE

***Brugmansia* × *candida* Pers.**

Of hybrid origin in Ecuador; now widely planted and naturalized in the tropics of both hemispheres.

Cuper, 3100 m. Naturalized shrub at edge of maize plot.

kampachu (Qu.) [K244]

Use unknown (G.P.).

***Cestrum conglomeratum* Ruiz & Pavón**

Colombia to Peru.

Cuper, 3300–3450 m. Shrub along brook.

ñukhaw (Qu.) [D1749]

Name and use unknown (S.J.) [D1749]

Use unknown (G.S.).

***Datura stramonium* L. ssp. *ferox* (L.) Barclay comb. nov. ined.**

Native to South America; naturalized in arid regions of North America and Africa.

Urquillos, 3100 m.

rurutillu (Qu., *ruru*, 'fruit') (P.P.) [K321]

khishqa khishqa (Qu., *khishqa*, 'thorn') (B.G.) [K321]

aña panku (Qu.) possible name (U.I.) [K321]

Name and use unknown (Am.Q., G.S.) [K321]

Consumed as tea for stomach pains (U.I.). Use unknown (B.G., P.P.).

***Dunalia spinosa* (Meyen) Dammer**

Southern Peru.

Cuper, 3810 m. In hedgerows along trail.

t'anqar (Qu.) [D1364]

The name refers to the resemblance of the spines to the way infants sleep with their arms thrown up over their heads (G.S.). The flower is used as a purple dye (G.A.). This spiny shrub

is planted in hedgerows to fence in animals.

***Hebecladus* sp.**

(*Saracha herrerae* C. Morton—appropriate combination not yet made in *Hebecladus*)
Central to southern Peru.

Cuper, 3750–3810 m. In moist soil along stone fence by brook and along trail.

yawar ch'unqa (Qu., *yawar*, 'blood'; *ch'unqa*, 'suck') [D1360]

awilmantu (Qu.) (G.S.) [K114]

The edible fruit of *awilmantu* is called *puka ruru* (Qu., *puka*, 'red'; *ruru*, 'fruit') (G.S.). The leaves are used to stop bleeding. The leaf epidermis is pulled back and the leaf is applied to the wound (G.P.). Alternatively, the fresh leaves may be ground and applied as a poultice for the same purpose (G.S.). Shepherds eat the fruit of this plant, and paint their lips with the red nectar from the corolla to color them red.

***Lycianthes lycioides* (L.) Hassler**

Colombia south to Chile and Argentina.

Yanacona, 3810 m. On rock outcrop (D1402).

Cuper, 3700 m. Along trail (D1426).

qhishwa t'anqar (Qu., *qhishwa*, 'warm place') (G.S.) [D1402, D1426]

t'anqar khishqacha (Qu., *khishqa*, 'spiny plant') (B.G.) [D1426]

yuraq t'ika t'anqar (Qu., *yuraq*, 'white'; *t'ika*, 'flower') alternate name (N.C.) [D1402]

Stems used as a broom (N.C.).

***Nicandra physalodes* (L.) Gaertner**

Native of Peru, now widely cultivated as ornamental.

Urquillos, 3000–3300 m. Along trail and in old fields.

p'irqa (Qu.) (P.P.) [K303]

phalcha (Qu.) alternate name (B.G.) [K303]

paya paya (Qu., *paya*, 'little old lady') alternate name (C.R.) [K303]

willq'u (Qu.) alternate name (Am.Q., G.S.) [K303]

Tea made from this plant is drunk for fever (P.P.).

***Nicotiana glauca* Graham**

Peru to Argentina; elsewhere widely cultivated and naturalized.

Urquillos, 3000–3300 m. Shrub next to house and in courtyard.

supay (supa) kayqu (Qu., *supay*, 'devil') [K304]

Boiled and rubbed on body for rheumatism and as a disinfectant (U.I.). Drunk in Chinchero and Puno for relief from the cold (U.I.). A friend we met on the trail was excited to see our collection of this plant and took some, explaining that his wife had been hit in the eye with a stick and was not getting better, and that her continuing illness must be due to a *suq'a* (Qu., 'bad spirit'). He was going to boil this plant and rub it on her body to take care of the problem. C.R. corroborated the plant's use as a bath, and added that *p'aqus* (Qu., 'curers') take the plant in secret. They intoxicate themselves by drinking maize beer (Sp., *chicha*) into which the leaves have been rubbed (C.R.).

***Nicotiana tomentosa* Ruiz & Pavón**

Central Peru to Bolivia.

Cuper, 3300–3450 m. At edge of brook.

q'armatu (Qu.) (G.S.) [D1746]

paya paya qhura (Qu., *paya*, 'old lady'; *qhura*, 'herb') alternate name (S.J.) [D1746]

Fruit of *capulí* (*Prunus serotina* ssp. *capulí*) is taken to market wrapped in the leaves of this plant (S.J.).

***Nicotiana undulata* Ruiz & Pavón**

Northern Peru to northwestern Argentina.

Q'era-pata, 3800 m. In waste ground about houses.

kamasayri (Qu., *sayri*, 'tobacco') [D1600]

The plant is toasted or passed through the fire, then rubbed on aching stomachs, particularly children's (G.S., B.G.).

***Salpichroa gayi* Benoist**

Southern Peru.

Cuper, 3600 m.

piris piris (Qu.) [D1420]

Children eat the rather bitter fruit (G.S.).

Salpichroa glandulosa* (Hook.) Miers ssp. *glandulosa

Peruvian Andes.

Tauca, 4050–4500 m. From rocks on steep slopes.

Cuper, 4500 m. Summit of Antakillqa hill.
aqha aqha qhura (Qu., *aqha*, 'maize beer';
qhura, 'herb') (L.H., L.P.) [D1554,
D1707]

Name and use unknown (G.A., G.S.)
[D1554, D1707]

Fruit is not edible; plant has no use (L.H.).
Children eat the fruit (L.P.).

Saracha herrerae Morton: see **Hebecladus**

Solanum acaule Bitter

Central Peru, Bolivia, and Argentina.

Cuper, 3810–3840 m. Herb along trail and
uncultivated in *habas* field below rock
outcrop called Antasakha.

atuq papa (Qu., *atuq*, 'fox') (G.P.,
G.S.) [D1353, F351]

Plant has no use (G.P.). Said by G.P. to
be the same as D1352 (*Solanum*
tuberosum).

Solanum aloysiifolium Dunal

Peru and Bolivia.

Cuper, 3360 m. Shrub on steep slope at
Puqpuq waterfall.

qusmayllu (Qu.) possible name [D1799]

Use unknown (B.G.).

muyu khaya (Qu.) (T.L.) [F297]

Useful as cattle forage (T.L.).

Solanum arequipense Bitter

Peru and Bolivia.

Cuper, 3810 m. Shrub along trail.

qusmayllu (Qu.) [D1348]

Name and use unknown (G.S.) [D1348]

Fruits of this plant are squeezed together
and added to water to wash hair in
the morning (G.P.).

Solanum glandulosipilosum Bitter

Peruvian Andes.

Cuper, 3600–3750 m. Shrub in moist soil on
Antakillqa hillside, at place on hillside
called Suytu Rumiuyq Pampa, and in
moist shady soil immediately below rock
outcrop called Chinkana.

qusmayllu (Qu.) [D1440, F348]

Name and use unknown (G.S.) [D1440]

Used to wash the head, especially by
drunken or hung over women (G.P.).

Solanum marinasense Vargas

Peru (Department of Cusco).

Cuper, 3360–3750 m. Herb on steep talus
slope next to Puqpuq waterfall, and in

soil in deep cleft in rock outcrop called
Machu Tuq'uyuyq Qaqa.

Name and use unknown (B.G.) [D1798]

atuq papa (Qu., *atuq*, 'fox') [F350]

k'ita papa, *kipa papa* (Qu., *k'ita*, 'fer-
al') [F350]

Use unknown (M.C., G.S.).

Solanum nitidum Ruiz & Pavón

Peru and Bolivia.

Q'erapata, 3800 m. Shrub on adobe walls.

ñuñumiya (Qu., *ñuñu*, 'breast') [D1602]

Name and use unknown (B.G.) [D1602]

The fruit of this plant is eaten by *chiwaku*
(Qu., a bird) (G.S.).

Solanum ochrophyllum Van Huerck & Muell. Arg.

Central Peru to Bolivia.

Cuper, 3350–3500 m. On hillside.

qusmayllu wayq'u (Qu.) [D1777]

Used to relieve the pain of drunkenness;
the leaves are heated in a pot, and
the affected person washes in the
steam (G.P.).

Solanum tuberosum L.

Central Andes. Cultivated in temperate re-
gions worldwide.

Umasbamba, 3800 m. Cultivated on open
pampa.

ch'iri papa: *wañu* (Qu., *ch'iri*,
'cold') [K149]

ch'iri papa: *q'usi* (Qu., *ch'iri*, 'cold') [K150]

Ch'iri papas are specialized for quite cold
places, grow short in stature (G.S.).

Pukamarka, 3800 m. Cultivated in fields (Jo.C.)
at edge of Lake Piuray.

yana papa (Qu., *yana*, 'black') [K168]

papa Olones (Olones is the name of a sector
of Chinchero) [K168]

Eugenio Aucapuma of Olones 'invented'
this potato, through breeding it from
seeds in the potato fruits (Qu., *am-
barqutu*). Everyone in Chinchero is
proud of this and of the fact that the
potato is widely used and known as
"Olones" (Jo.C.).

(*papa*) *qumpis* [K169]

Cultivated in field (Jo.C.).

(*papa*) *mariba* [K170]

This cultivar was brought to Chinchero
recently by the Ministry of Agricul-
ture (Jo.C.).

papa cusqueña (Sp.) [K171]

Good potatoes to eat: to fry or eat boiled

in main dishes (Jo.C.). This cultivar was brought to Chinchero recently by the Ministry of Agriculture (Jo.C.).

yana bole (papa) (Qu., *yana*, 'black') [K172]

This cultivar was brought to Chinchero recently by the Ministry of Agriculture (Jo.C.).

papa blanca (Sp., *blanca*, 'white') [K173]

This is an old (Sp., *antiguo*) potato cultivar (Jo.C.).

Yanacona, 3850 m. Cultivated in fields of area called Patakata.

yana suytu (papa) (Qu., *yana*, 'black'; *suytu*, 'long and pointed') [K196]

yana wiraqucha (papa) (Qu., *yana*, 'black'; *wiraqucha*, 'white man') [K196]

virundis (Qu.?) [K196]

ruyaqa waña (papa) (Qu., *ruyaqa*, 'white') [K197]

Used for *ch'uñu* (Au.Q.).

puka qumpis (papa) (Qu., *puka*, 'red') [K198]

yana mariba (papa) (Qu., *yana*, 'black') [K199]

yungay (papa) (Sp., *Yungay* is a town name) [K200]

alka qumpis (papa) [K201]

Best potato for eating (Au.Q.).

Ayllu Punqu (K'aparay), 3800 m. Cultivated in terraced irrigated area on SE shore of Lake Piuray.

imilla papa (Qu., *imilla*, 'twin') [K269]

Cuper, 3800 m. Cultivated in fields at edge of ruins below community center.

papa mantaro (Sp., Mantaro is the name of a river in Central Peru) [K312]

Cultivar name unknown [K313]

Cuper, 3810 m. Feral along trail.

atuq papa (Qu., *atuq*, 'fox') [D1352, K312]

No use (G.P.). D1352 was said by G.P. to be the same as D1353 (*Solanum acaule*), but growing in the shade.

All of the above were cultivated for food except D1352.

***Solanum zahlbruckneri* Bitter**

Peruvian Andes.

Ayllu Punqu, 3750 m. On steep bank above brook.

Name and use unknown (B.G.) [D1756]

***Solanum* sp.**

Cuper, 3840 m. Shallow soil around Antasakha rock.

atuq papa (Qu., *atuq*, 'fox') [F352]

No use known (G.S.).

TROPAEOLACEAE

***Tropaeolum tuberosum* Ruiz & Pavón**

In the Andes from southern Venezuela to northern Argentina; both cultivated and feral.

Cuper, 3450–3550 m. Vining over shrubs on steep slope above Puqpuq waterfall.

k'ita añu (Qu., *k'ita*, 'feral') (G.S.) [D1463]

Pukamarka, 3800 m. Herb cultivated for edible tuber in fields by Lake Piuray.

yaña añu (Qu., *yana*, 'black') [K155]

yana ñawi (Qu., *yana*, 'black'; *ñawi*, 'eye') [K155]

sambo añu (Sp., *zambo*, 'black') [K155]

Stems and tubers are both black (Jo.C.).

Harvested in September (Jo.C.).

Ch'ussu, 3800 m. Herb cultivated for edible tuber in irrigated fields.

platáno añu (Qu. from Sp., *plátano*, 'banana') [K276]

Name refers to shape of tuber.

Tauca, 3800 m. Herb cultivated for edible tuber.

Name not recorded [K232]

Only a few families in Chinchero still cultivate *Tropaeolum tuberosum* (Qu., *añu*), although it is valued as a tuber complementary in taste and texture to potatoes, *lisas*, and *oca*. *Añu* is planted in September in small quantities in fields at or above 3800 m., and harvested in June. The tubers are eaten in the fields during harvest after baking in an earth oven (Qu., *wathiya*), or stored to be boiled and eaten later. *Añu* is not freeze-dried. To taste good, tubers must be left in the sun for two days if dug up at harvest time, or for two weeks if dug up earlier in the year, say, in March.

Like *oca*, *añu* varietal names refer to a variety of elements, including color—'yellow' (Qu., *qhil-lu*), 'red' (Qu., *puka*), and black (Qu., *yana*); tuber shape—'banana-shaped' (Sp., *plátano*) and 'squash-shaped' (Qu., *sapallu*); eye character, such as 'black-eyed' (Qu., *yana ñawi*). We were unable to confirm the identity of *qanchis wata añu* (Qu., 'seven-year-añu'), which was reported to grow from seeds accidentally remaining in the soil and to produce edible tubers after seven years, the period of one cycle of sectoral fallowing. A single feral specimen of *Tropaeolum tuberosum* (D1463), *k'ita añu*, was said never to form tubers and so never to be eaten. No other *Tropaeolum* species were found in Chinchero.

UMBELLIFERAE

Arracacia aequatorialis Constance

Southern Ecuador to southern Peru.

Cuper, 3810 m. Herb along trail.

rakhacha (Qu.) [D1368]

Species is neither edible nor cultivated as is *A. xanthorrhiza* (G.P.).

Arracacia peruviana (H. Wolff) Constance

Peru, 2800–3750 m.

Cuper, 3700 m. Wild herb along trail.

rakha rakha (Qu.) (G.S.) [D1424]

puna rakhacha (Qu.) (G.S.) [D1424]

Ayllu Punqu, 3750 m. In old field along brook.

k'ita rakhacha (Qu., *k'ita*, 'feral'; *rakhacha*, 'Arracacia xanthorrhiza') (T.H., G.S.) [K117]

The cooked stem is edible and eaten, although G.S. commented negatively that it tastes the way a newborn puppy smells. The plant is recognizable by this smell (G.S.). To treat craziness, this herb is cooked in soup made with the head of a black dog (G.S.).

Arracacia xanthorrhiza Bancroft

Cultivated, West Indies to Peru and Bolivia.

Cuper, 3200 m. Cultivated in field.

rhakhacha (Qu.) [K213]

Cultivated for the edible underground portions (G.P.). L.P. planted *rakhacha* in his low, warm corn field as an experiment to determine whether or not he could make it grow in Chinchero. His interest in planting a wide range of cultigens was challenged by this crop which is considered impossible to grow at such a high altitude. Ultimately, he decided that it was not impossible, but also was not worth the effort.

Azorella multifida (Ruiz & Pavón) Pers.

Colombia and Venezuela to Bolivia.

Tauca, 4050–4250 m. Forming dense cushions on steep rock slopes.

puma tanqa (Qu.) (L.H., M.H.) [D1570]

supu supu (Qu.) alternate name (G.S.) [D1570]

Plant has no uses (L.H., M.H., G.S.).

Bowlesia flabilis J. F. Macbr.

Peru, Bolivia, and northern Argentina.

Cuper, 3810 m. Wild herb in houseyard garden.

uphuy suru (Qu.) [K105]

Used to make a tea to treat a cough or for breakfast (G.S.), or tea for *inflamación intestinal* (Sp.) (T.H.).

Bowlesia tropaeolifolia Gillies & Hook.

High Andes of Peru south to Tierra del Fuego.

Tauca, 4000–4200 m. In small depression on cliff face.

Name and use unknown (T.H., G.S.) [K185]

Coriandrum sativum L.

Native to Mediterranean region. Widely cultivated as condiment and adventive in warmer parts of Western Hemisphere.

Cuper, 3810 m. Cultivated in houseyard garden.

culandro (Qu., from Sp. *cilantro*, 'coriander leaves') [K109]

Leaves only are a condiment frequently used in cooking and hot sauces. Sold in Chinchero and Cusco markets.

Daucus montanus Humb. & Bonpl. ex Sprengel

Mexico to Patagonia.

Cuper, 3600–3900 m. In cracks of large rock outcrop called Maranqaqa (D1379) and under rock outcropping on Antakillqa hillside (D1691).

hamp'atu perejil (Qu., *hamp'atu*, 'frog'; Sp., *perejil*, 'parsley') (G.S.) [D1379]

suk'a perejil (Qu.; Sp., *perejil*, 'parsley') (G.S.) [D1379]

Of no use (G.S.).

puna colander (Qu., from Sp., *cilantro*, 'coriander leaves') (L.P.) [D1691]

Used for tea for stomachache (L.P.). Root is helpful when rubbed on a sore wrist (B.G.). Leaves, which are said to smell like *cilantro*, can be ground in hot sauce (L.P.).

Eremocharis triradiata (H. Wolff) I.M. Johnston

Known only from Department of Cusco, Peru, 2000–3400 m.

Cuper, 3100 m. Along trail.

qhishwa ruda (Qu., *qhishwa*, 'warm place'; Sp., *ruda*, 'rue') (B.G.) [K318]

culandro (Qu., from Sp. *cilantro*, 'coriander leaves') (Am.Q., G.S.) alternate name [K318]

Useful to rub on skin (Qu., *kakunapaq*) in the same way as rue (Sp., *ruda*) (B.G.).

Eryngium weberbaueri H. Wolff.

Southern Peru to Bolivia.

Cuper, 3800–3900 m. Herb cultivated in houseyard garden and among grasses on steep slope of Antakillqa hillside at place called Unu Urphuyuq.

negro uman (Sp., *negro*, ‘black’; Qu., *uman*, ‘head’) [K108, F302]

escobilla del cerro (Sp., ‘little broom of the hill’) (T.H.) [K108]

Used to treat bronchitis and *desmantu* (Qu., from Sp., *desmandado*, waist-level backache from exhaustion) (G.S.). Used to make a tea to treat coughs (T.L.). Use unknown (T.H.). Sold in Chinchero and Cusco markets.

Foeniculum vulgare Miller

Native to Mediterranean region; adventive throughout Western Hemisphere.

Cuper, 3810 m. Herb cultivated in houseyard garden.

hinojo (Sp.) (N.C., A.Co., G.S.) [D1396]

Fennel, a cultivated herb. Main ingredient in *sankhu*, a food of ground toasted *habas*, wheat, maize, and dried peas (N.C.). Also used as tea (N.C.), for breakfast and for stomachache (G.S.). This plant has no Quechua name.

Hydrocotyle urbaniana H. Wolff

Known only from Peruvian Andes.

Cuper, 3450–3900 m. Herb on hillside and on moist rock.

buton buton (Qu. from Sp., *botón*, ‘button’ or ‘bud’) (L.P.) [D1698]

chili chili (Qu.) (A.Ca., G.P.) [D1480]

frutilla (Sp., ‘strawberry’) possible name (B.G.) [D1698]

uphuy suru (Qu.) (G.A.) [D1698]

Name and use unknown (G.S.) [D1480]

The peeled root is used to make a tea for fevers (G.P.); the root is boiled and its ‘fruit’ is eaten (B.G.). Drunk in tea for ailments of the ‘side’ (Sp., *costado*) (G.A.). Use unknown (L.P.).

Niphogeton stricta (H. Wolff) Mathias & Constance

Known only from Andes of Peru.

Tauca, 4050–4250 m. Herb on steep rocky slopes.

hamp’atu perejil (Qu., *hamp’atu*, ‘frog’; Sp., *perejil*, ‘parsley’) [D1557]

No use reported (U.I.). Plant may have medicinal use (G.S.).

Oreomyrrhis andicola (Kunth) Hook. f.

Colombia to northern Argentina.

Tauca, 4050–4250 m. Steep rocky slopes.

Cuper, 3600–3900 m. Under rock outcropping.

hamp’atu perejil (Qu., *hamp’atu*, ‘frog’; Sp., *perejil*, ‘parsley’) (B.G., L.H.) [D1530]

puna perejil (Qu., *puna*, ‘high area’; Sp., *perejil*, ‘parsley’) possible name (B.G.) [D1530]

puna colander (Qu., *puna*, ‘high area’; from Sp. *colander* = *cilantro*, ‘coriander leaves’) (L.P.) [D1691]

Name and use unknown (G.S.) [D1530]

Use unknown (L.H.). Used for tea for stomachache (L.P.). Helpful to rub the root on a sore wrist (B.G.). Leaves, which smell like *cilantro* (Sp., ‘coriander leaves’), can be substituted for them in hot sauce and other foods.

URTICACEAE

Pilea serpyllacea (H.B.K.) Wedd.

In the Andes from Venezuela to Bolivia.

Cuper, 3600–3700 m. Steep hillside.

aqy k’aqka (Qu., *aqy*, ‘flour’; *k’aqka* are small natural holes in stone where dirt collects, which are the habitat of this plant) [D1416, D1733]

qaqa uvas uvas (Qu., *qaqa*, ‘rock’; Sp., *uvas*, ‘grapes’) (S.J.) [D1733]

Raw fruit is eaten by shepherds, and fed to children who are slow in learning to talk (G.S.).

Urtica dioica L.

Introduced weed from Eurasia.

Cuper, 3450–3810 m. Herb in rock walls along trail (D1357) and in quebrada above Puqupuq waterfall (D1491).

puka t’ulluyuq khisa (Qu., *puka*, ‘red’; *t’ulluyuq*, ‘stemmed’; *khisa*, ‘nettle’) [D1357]

chunchu khisa (Qu., *chunchu*, ‘jungle native’; *khisa*, ‘nettle’) [D1357]

ortiga (Sp., ‘nettle’) [D1357]

mula khisa (Qu., *khisa*, ‘nettle’) (G.S.) [D1491]

The plant is rubbed on the head for headache (N.C.). The flower is made into a tea with other spiny plants for

medicine against measles (N.C.). Juice is expressed by rubbing plant between hands (in a cloth) with *chicha* (Sp., 'maize beer'). This juice is drunk with *trago* (Sp., 'cane alcohol') to counteract its effects (C.Q.). Used to treat allergies by rubbing the fresh plant on the body (G.S.).

***Urtica urens* L.**

Introduced weed from Eurasia, widely distributed in the New World.

Cuper, 3810 m. Herb in rich disturbed soil of old pigpen in house courtyard.

puka t'ulluyuq khisa (Qu., *puka*, 'red'; *t'ulluyuq*, 'stemmed'; *khisa*, 'nettle') [K208]

Use unknown (G.P.).

VALERIANACEAE

***Valeriana agrimoniifolia* Killip**

Central and southern Peru.

Yanacona, 3810 m. Herb on rock outcrop.

Cuper, 3700 m. On hillside.

Name and use unknown (N.C., G.S.) [D1403, D1434]

***Valeriana* aff. *andina* Britton**

Southern Peru and Bolivia.

Cuper, 4500 m. Summit of Antakillqa hill.

Name and use unknown (G.S.) [D1722]

***Valeriana asplenifolia* Killip**

Peru (Cusco, Junín).

Cuper, 4000 m. In crack of rock and at place called Masuk'ayuyq on slopes of Antakillqa hillside.

aquy k'aqka (Qu.) [F301]

Used to make a tea to treat a swollen stomach (T.L.).

***Valeriana coarctata* Ruiz & Pavón**

Central and southern Peru.

Tauca, 4000–4250 m. Herb on steep rocky slopes, side of cliff.

chawi chawi (Qu.) (L.H., G.S.) [D1524, D1571, K189]

ch'iqu ch'iqu (Qu.) alternate name (M.H.) [D1571]

Name and use unknown (B.G., G.S., U.I.) [D1524, K189]

Cuper, 4500 m. Summit of Antakillqa hill.

sara sara (Qu., *sara*, 'maize') [D1714]

Name and use unknown (G.A.) [D1714]

Chawi chawi, the name from Tauca, means very thin, like a dying person.

Sheep eat this plant but no other use was reported (L.H., G.S., M.H., U.I.). The Cuper specimen (D1714) was identified as *sara sara*, and said to be the female (Sp., *hembra*) of D1653, *Altensteinia elliptica* (L.P.).

***Valeriana decussata* Ruiz & Pavón**

Central and southern Peru.

Yanacona, 3750 m. Erect herb on large sculptured rock outcrop called Chinkana.

wantu (wanti) khaya (Qu.) [F266A]

A cool (*fresco*, Sp.) plant, used to make juice to treat *fiebre intestinal* (Sp., 'internal fever'), called *sunqu calor* in Quechua, afflicting children and adults. Herb is pressed, and juice expressed is used as rub.

***Valeriana* aff. *herrerae* Killip**

Central and southern Peru.

Tauca, 4050–4250 m. Steep rocky slopes.

Name and use unknown [D1528]

***Valeriana micropterina* Wedd.**

Southern Peru and Bolivia.

Tauca, 4000–4250 m. Herb on steep rocky slopes and cliff faces.

aqha qupisun (Qu., *aqha*, 'maize beer') (G.S., U.I.) [D1546, K190]

sara sara (Qu., *sara*, 'maize') suggested name (L.H.) [D1546]

Cuper, 3600–4500 m. By trailside, and on Antakillqa hillside among mosses on rock, in crack of rock on slopes, at place called Masuk'ayuyq, and at summit of hill.

aqha qupisun (Qu., *aqha*, 'maize beer') (U.I.) [D1694, D1705]

culantro pusu (Qu., from Sp. *cilantro*, 'coriander') (B.G.) [D1705]

Name and use unknown (G.A.) [D1694, D1705]

The root with epidermis is boiled for tea given to babies and children with distended stomachs, and as a cure for babies with diarrhea or excessive urination (L.H., L.P., G.S., U.I.).

***Valeriana radicata* Graebner**

Southern Peru.

Tauca, 4000–4200 m. Herb on rock face.

Name and use unknown (B.G., G.S.) [K193]

***Valeriana renifolia* Killip**

Central and southern Peru.

Cuper, 3700 m. Herb in steep banks.

Name and use unknown (G.P., G.S.) [D1421]

Valeriana warburgii Graebn.

Yanacona, 3750 m. Erect herb on large sculptured rock outcrop called Chinkana.

wantu (*wanti*) *khaya* (Qu.) [F266B]

A cool (*fresco*, Sp.) plant, used to make juice to treat *fiebre intestinal* (Sp., 'internal fever'), called *sunqu calor* in Quechua, afflicting children and adults. Herb is pressed and juice is expressed and used as rub.

VERBENACEAE

Aloysia fiebrigii Hayek

Southern Peru, Bolivia.

Cuper, 3400 m. Woody shrub on hillside.

cedron cedron (Qu., from Sp. *cedro*, 'cedar') [D1757]

Prepared in a tea to treat headaches (G.P.).

Aloysia scorodonioides (H.B.K.) Cham. var. *lopez-palacii* Mold.

Cusco, Peru.

Pirqa Kachun, 3000–3300 m. Woody shrub on dry hillside.

Name and use unknown (B.G., Am.Q., P.P., C.R., G.S., U.I.) [K308]

Informants pointed out that this plant was not *pimpinilla* (P.P.), *lakre* (C.R.), *kiyuña* (C.R.), *cedroncillo* (B.G., Am.Q., G.S.), or *ñuqchu* (B.G.).

Citharexylum pachyphyllum Mold.

Southern Peru.

Cuper, 3500–3600 m. Steep rocky slopes of Antakillqa hillside.

murmunkis (Qu.?) (N.C., B.G., G.P.) [D1655]

Wood used to make hoe handles; berries provide a dye (G.P.). Our dye experiments with this plant gave a blue green on wool with alum mordant in a neutral bath; pea green with alum basic; and dull purple with alum acid.

Duranta aff. *mandonii* Mold.

Colombia to Bolivia.

Cuper, 3500–3600 m. Spiny shrub on steep rocky slopes of Antakillqa hill.

t'anqar (Qu.) (G.P.) [D1664]

murmunkis (Qu.) (G.A., G.S.) [D1664]

uq'i sach'a (Qu.) (N.C., B.G.) possible name [D1664]

wayruru (Qu.) (N.C., B.G.) possible name [D1664]

Use unknown (G.P., G.S.). Useful as a dye; not to be drunk (G.A.).

Verbena hayekii Mold.

Peru and Bolivia.

Yanacona, 3750 m. Herb in fallow field on moist pampa.

mirminhada (Qu.?) suggested name (G.P.) [D1616]

pampa verbena (Qu., *pampa*, 'flat, low-growing'; Sp., *verbena*) suggested name (G.P.) [D1616]

pampa lakre lakre (Qu., *pampa*, 'flat, low-growing'; Sp., *lacre*, 'red') suggested name (G.P.) [D1616]

Name and use unknown (B.G.) [D1616]

Use unknown (G.P.). Not *khuñuqa* (Qu.) by smell (B.G.).

Verbena hispida Ruiz & Pavón

Ecuador to Chile and Argentina.

Cuper, 3330–3810 m. Along trail and in old rocky field.

verbena (Sp.) (B.G., G.P., G.S.) [D1350, D1819]

The plant is boiled in water; the water is allowed to cool, then used to wash the head for headache (usually the result of drinking too much *trago* (Sp., 'cane alcohol') (B.G.). The entire plant is rubbed on the body to cleanse and give strength for running (G.P.). No Quechua name for this plant was reported.

VIOLACEAE

Viola pygmaea Juss. ex Poiret

Southern Peru and Bolivia.

Taucca, 4050–4250 m. Herb on steep rocky slopes.

Cuper, 4200–4500 m. In shallow soil on slopes of Antakillqa hillside at place called K'iqutuyuqkata and at summit of hill.

q'ara maransiras (Qu., *q'ara*, 'skin') [D1536]

wallpa wallpa (Qu., *wallpa*, 'chicken') (G.A., B.G., T.L., L.P., G.S.) [D1536, D1701, F306]

Only known use as browse for sheep (T.L., L.P., G.S.).

Conclusion

We do not treat here the complex system of classification of plants used by the people of Chinchero (see Franquemont, 1987). We briefly describe, however, a single example to suggest the nature of that logic, and to describe the chasm in understanding that we, as investigators, had to cross. Chinchero people identify a number of plants as having male or female gender (cf. Girault, 1984, p. 30). The data suggest that people think of most plants as bisexual. Plants present an array of sex and gender configurations very different from those which describe human beings. In the Quechua examples, 'male' or 'female' is the secondary term in a two-part name, so that a plant can be referred to simply by its name, one word, or if the occasion warrants, be further identified as 'male' or 'female.' The Quechua words *urqu* ('male') and *china* ('female') are used to describe animals and some plants, but not people. The age-related Quechua terms used to describe people also specify their sex, so that the addition of 'male' or 'female' would be redundant. Chinchero people translate *urqu* and *china* directly to the Spanish *macho* 'male' and *hembra* 'female,' which are used by primary Spanish-speakers to refer respectively to males of any age and to female children, as well as to animals. These terms are familiar to all Chinchero residents and can be used interchangeably.

We were anxious to learn what Quechua gender identifications of plants might reflect. Since we had not ever heard a Chinchero person explain plant reproduction in sexual terms, we doubted that the designations were based on ideas of reproductive roles. We first speculated that gender might just be a convenient designation for plants which had two growth forms, an application of the handiest dualism. We were not surprised to learn that most male plants were tall and erect, while most female plants were (relatively) short and squat; for example, *Perezia pungens* ('male') and *Perezia pinatifida* ('female'). As a generalization, however, the "convenience" hypothesis did not prove true. Gender was not the only medium used to designate varieties; some plants had four or five growth forms which were distinguished by environmental preferences, and sometimes only two forms were distinguished in this way. Although gender was applied to a few plants which had more than one growth form but grew in the same general area, such an application was not universal, and many plants varied in ways which were not considered noteworthy.

A different generalization did emerge. Many of these plants were considered to be useful, and in those cases, the female was more useful, stronger in the desired character, more fertile in the sense of providing an essence of utility, be it a dye (*Bidens* spp.), a defense (*Ruta graveolens*), or a tea (*Bartsia* cf. *bartsoides*). The male plant then was weaker, sterile, infertile. These roles parallel other aspects of this agricultural society in which the earth is considered to be female, in which (as in any other) female animals are worth more than male animals because of their reproductive potential.

The life cycle of a plant that grows in our own woods provides a familiar illustration for the Chinchero concept of equivalence of fat and juice, fat and fertility, fat and female gender, and ultimately fat and beauty. The jack-in-the-pulpit (*Arisaema triphyllum*) is sequentially hermaphroditic: an individual plant regrows from its roots each spring, taking either a male or a female form depending on the nourishment it has received and the moisture it has been able to store. During a wet spring, the plant may be well enough fed to take a female form, having stored the extra energy needed to support the fertility of female growth. In another, dryer year, it may re-emerge as a male. Of course, we judge 'male' and 'female' in *Arisaema* on the presence of male organs (producing pollen) or female organs (carrying seeds), a distinction not generally recognized by Chinchero people. But the plant's ontology also has parallels with Quechua gender concepts. Quechua people logically associate female, fertility, swelling, and fat, and describe a life-style of sequential hermaphroditism for *kiyawcha* (several orchid species) based on the size of a plant's water-bearing pseudobulb.

It is our hope that this work may serve as a basis for further investigations by a wide range of researchers into the many diverse topics of ethnobotany.

Acknowledgments

A large number of people have worked to support our study since its inception in 1982. Support for fieldwork was provided almost entirely by grants from EARTHWATCH, Inc., and the project was ably assisted by the following EARTHWATCH volunteers: Patricia Adakonis, Peter Alcorn, Deanna Alderman, Ellen Blosser, Margaret Buck, Helen Daly, Christine Heman, Gladys Howard,

Susan Howard, Molly Hunter, Ernest Igou, Rob Lemelson, Al Lovejoy, Eunice Lovejoy, Ruth Mead, Karl Richards, Winifred Ross, Irene Saletan, and Anne Stockdale. Additional funding came from private sources, and grants to C. Franquemont from the National Science Foundation, the U.S. Department of Education (Fulbright), and the Social Science Research Council are gratefully acknowledged.

We owe a great deal to the people of Chinchero who generously shared their lives and knowledge with us, among them, Guadalupe Alvarez, Angelica Concha, Adela Callañaupa, Nilda Callañaupa, Vicente Callañaupa, Jeronimo CusiHuaman, Melchior CusiHuaman, José CusiHuaman, Lucia Gomez, the late Benita Gutierrez, the late Anisetto Huaman, Maria Huaman, Lorenzo Huaman, Octavio Huaman, Tomás Huaman, Simeona Jaimes, Teodora Livita, Graciano Pumaaylli, Lorenzo Pumaaylli, Pedro Pablo Pumayalli, A. Quillahua-man, Amerigo Q., Cipriana Quispe, Genovevo Sallo, and the late Julian Sallo, and in Cusco, Lucio CusiHuaman. For sponsorship and support in the field, we would like to thank Emma Cerrate and Magda Chanco of the Museo de Historia Natural 'Javier Prado' in Lima; Manuel Chavez Ballón of the University of Cusco.

The staff of Field Museum worked very hard to complete this study. We would especially like to thank Penny Matekaitis and Michael Dillon of Field Museum, as well as the many other specialists who identified plants: I. Al-Shebaz, D. F. Austin, F. Ayala, R. Barneby, F. Barrie, K. Baringer, R. Callejas, E. Christenson, L. Constance, J. Cuatrecasas, G. Davidse, L. T. Dempster, C. H. Dodson, T. Duncan, J. Engel, R. B. Faden, P. Fryxell, V. Funk, R. E. Gereau, D. Griffin, R. M. Harley, J. Henrich, M. J. Huft, A. T. Hunziker, C. Jeffrey, S. Keel, R. M. King, S. Knapp, T. Koyama, S. Laegaard, E. Landolt, J. Luteyn, H. E. Luther, A. Meerow, U. Molau, H. Moldenke, M. Nee, E. Norman, P. Ponce de Leon, M. Poston, J. S. Pringle, P. Raven, R. Rollins, B. Simpson, R. Singer, D. N. Smith, L. Smith, D. D. Soejarto, W. D. Stevens, R. G. Stolze, B. L. Turner, W. L. Wagner, J. Wurdack, and A. D. Zimmerman.

The authors would like to acknowledge the help of Richard Evans Schultes; Lawrence Carpenter (for Quechua); Robin Foster; the Bailey Hortorium, in particular, the late Michael Whalen, Sandra Knapp, and Bob Dirig; and of Tom Holloway, Lourdes Brache and Billie Jean Isbell of the Cornell Latin American Studies Program, especially for computer support.

We are grateful to the institutions and individuals who contributed to the publication fund for this volume: The World Wildlife Fund, Field Museum of Natural History, Clark S. Robinson, Jr., Clark S. Robinson III, and Robert Leathers and Cheryl Nickel.



Literature Cited

- ALCINA FRANCH, JOSÉ. 1976. *Arqueología de Chinchero*. Vol. 1, *La Arquitectura*. Ministerio de Asuntos Exteriores, Madrid.
- ALCORN, JANIS. 1984. *Huastec Mayan Ethnobotany*. University of Texas Press, Austin, 982 pp.
- BASTIEN, JOSEPH. 1982. Herbal curing by Qollahuaya Andeans. *Journal of Ethnopharmacology*, 6: 13–28.
- BERLIN, BRENT, D. E. BREEDLOVE, AND P. H. RAVEN. 1974. *Principles of Tzeltal Plant Classification*. Academic Press, New York, 660 pp.
- BRISTOL, MELVIN L. 1968. *Sibundoy Agricultural Vegetation*, pp. 575–602. *Actas y Memorias del 37 Congreso Internacional de Americanistas*, vol. 2. Buenos Aires.
- BRUNEL, GILES R. 1975. *Variation in Quechua folk biology*. Ph.D. diss., University of California, Berkeley, 268 pp.
- BRUSH, STEPHEN B. 1977. *Mountain, Field and Family: The Economy and Human Ecology of an Andean Valley*. University of Pennsylvania Press, Philadelphia, 199 pp.
- BRUSH, STEPHEN B., H. J. CARNEY, AND Z. HUAMAN. 1981. Dynamics of Andean potato agriculture. *Economic Botany*, 35: 70–88.
- CÁRDENAS, MARTIN. 1969. *Manual de plantas económicas de Bolivia*. Imp. Ichus, Cochabamba, Bolivia, 421 pp.
- CARTER, WILLIAM E. 1978. *Traditional Use of Coca Leaf in Bolivia: Multidisciplinary Study, Final Report*. Museo Nacional de Etnografía y Folklore, La Paz, 269 pp.
- . 1980. *Coca in Bolivia*. UFLA/NIDA: TUTAPI.
- COBO, BERNABE. 1891 (1654). *Historia del Nuevo Mundo*. Sociedad de Bibliófilos Andaluces, Madrid, 4 vols.
- CONTRERAS HERNÁNDEZ, JESÚS. 1985. *Subsistencia, ritual y poder en los Andes*. Editorial Mitre, Barcelona, Spain, 224 pp.
- CORRELL, DONOVAN S. 1962. *The Potato and Its Wild Relatives*. Texas Research Foundation, Renner, Texas, 606 pp.
- DAVIS, E. WADE, AND J. YOST. 1983. *The ethnobotany*

- of the Waorani of eastern Ecuador. Botanical Museum Leaflets, 29: 159–217.
- FISHER, WENDY. 1976. An ethnobotanical study: Medicinal plants of highland Peru. B.A. thesis, Pomona College, Claremont, Calif., 84 pp. [copy in Field Museum of Natural History].
- FORD, RICHARD I., ED. 1978. The Nature and Status of Ethnobotany. Anthropological Papers No. 67. Museum of Anthropology, University of Michigan, Ann Arbor, 428 pp.
- FRANQUEMONT, CHRISTINE R. 1979. Watching, watching, counting, counting. Human Nature, March.
- . 1982. The Chinchero center for traditional culture. Cultural Survival Quarterly, 6: 26.
- . 1986. Chinchero Pallays: An Ethnic Code, pp. 331–338. In Rowe, Ann P., ed., The Junius B. Bird Conference on Andean Textiles. The Textile Museum, Washington, D.C.
- . 1987. Chinchero plant categories: An Andean logic of observation. Ph.D. diss., Cornell University, Ithaca, N.Y., 223 pp.
- . In press. Learning to weave in Chinchero. In Lechtman, Heather, and A. M. Soldi, eds. La tecnología en el mundo andino: Runakunap Kawsayninkupag Rurasqankunaqa, vol. 2. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, México City.
- FRANQUEMONT, EDWARD M. 1982. Reserved shed pebble weave in Peru, pp. 43–53. In Rogers, Nora, and M. Stanley, eds., In Celebration of the Curious Mind: A Festschrift To Honor Anne Blinks on Her 80th Birthday. Interweave Press, Loveland, Colo.
- . 1983. Why do you think they call it Moray? Paper presented at the 23rd Annual Meeting of the Institute of Andean Studies, Berkeley, Calif.
- . 1987. The threads of time, pp. 81–92. In Schevill, Margot, ed., Costume as Communication. Haffenreffer Museum of Brown University, Providence, R.I.
- FRANQUEMONT, EDWARD M., AND C. R. FRANQUEMONT. 1986. Benita Gutierrez: Perfection was her only signature. A Report. [Journal of the] Museum of Folk and Craft Art, Los Angeles.
- . 1987 [1988]. Learning to weave in Chinchero. Textile Museum Journal, 26: 56–79.
- FREEMAN, PETER H. 1963. Some Factors Affecting Land Use in Chinchero, Peru. Interamerican Institute of Agricultural Sciences of the O.A.S., Tropical Center of Research and graduate training, Turrialba, Costa Rica.
- GADE, DANIEL W. 1966. Achira, the edible Canna, its cultivation and use in the Peruvian Andes. Economic Botany, 20: 407–415.
- . 1972. Setting the stage for domestication: *Brassica* weeds in Andean peasant ecology. Proceedings of the Association of American Geographers, 4: 38–40.
- . 1975. Plants, Man and the Land in the Vilcanota Valley of Peru. W. Junk, The Hague, 240 pp.
- GIRAULT, LOUIS. 1984. Kallawayas: Guérisseurs Itinérants des Andes. ORSTOM, Paris, 668 pp.
- GROBMAN, A., W. SALHUANA, AND R. SEVILLA, IN COLLABORATION WITH T. MANGELSDORF. 1961. Races of Maize in Peru. National Academy of Sciences, National Research Council Publication 915, Washington, D.C.
- HERRERA GARMENDIA, FORTUNATO L. 1933a. La duplicación de las voces en la nomenclatura indígena. Revista del Museo Nacional (Lima), 2: 3–8.
- . 1933b. Nomenclatura binaria indígena. Revista del Museo Nacional (Lima), 2: 131–136.
- . 1937. Botanistas de fines del siglo XVIII. Revista del Museo Nacional (Lima), 6: 95–124.
- . 1938. Plantas que curan y plantas que matan de la flora del Departamento del Cuzco. Revista del Museo Nacional (Lima), 9: 73–128.
- . 1939. Catálogo alfabético de los nombres vulgares y científicos de las plantas que existen en el Peru. Universidad San Marcos, Lima, 363 pp.
- . 1940a. Investigaciones de la flora del Cuzco y estado actual de nuestros conocimientos acerca de ella. Revista del Museo Nacional (Lima), 10: 78–90.
- . 1940b. Enumeración de algunos nombres quechuas atendiendo a su sílaba terminal. Revista del Museo Nacional (Lima), 10: 189–200.
- . 1941. Sinopsis de la Flora del Cuzco.
- . 1942. Glosario. Nomenclatura física de las plantas del Cuzco atendiendo a la índole de las lenguas de su origen. Revista del Museo Nacional (Lima), 12: 41–60.
- JOHNS, TIMOTHY A., AND G. H. N. TOWERS. 1981. Isothiocyanates and thioureas in enzyme hydrolysis of *Tropaeolum tuberosum*. Phytochemistry, 20: 2687–2689.
- JOHNS, TIMOTHY, AND S. L. KEEN. 1986. Ongoing evolution of the potato on the altiplano of western Bolivia. Economic Botany, 40: 409–424.
- KING, STEVEN R. 1982. Estudio Preliminar de la etnofarmacología tradicional y la salud general de los Angotero-Secoya del Norte del Peru. Amazonia Peruana, 3: 39–49.
- . 1988. Economic botany of the Andean tuber crop complex: *Lepidium meyenii*, *Oxalis tuberosa*, *Tropaeolum tuberosum* and *Ullucus tuberosus*. Ph.D. diss., City University of New York, New York.
- KING, STEVEN R., AND S. N. GERSHOFF. 1987. Nutritional evaluation of three under-exploited Andean tubers: *Oxalis tuberosa*, *Ullucus tuberosus*, and *Tropaeolum tuberosum*. Economic Botany, 41: 503–511.
- LEON, JORGE. 1964. Plantas Alimenticias Andinas. Boletín Tecnico No. 6, Instituto Interamericano de Ciencias Agrícolas, Zona andina, Lima, 112 pp.
- LIRA, JORGE A. 1946. Farmacopea tradicional y indígena y prácticas rituales. El Condor, Lima, 107 pp.
- MACBRIDE, J. FRANCIS, ED. 1936–1981. Flora of Peru. Fieldiana: Botany, Field Museum of Natural History, Chicago.
- MEYER, ENRIQUE J. 1974. Reciprocity, Self-sufficiency and Market Relations in a Contemporary Community in the Central Andes of Peru. Cornell University Latin American Studies Program Dissertation series, No. 72, Ithaca, N.Y.
- MONTALVO, ABNER S. 1965. Chinchero social structure: A Mestizo-Indian community of south Peru. M.A. thesis, Cornell University, Ithaca, N.Y., 220 pp.

- NILES, SUSAN. 1987. Callachaca: Style and Status in an Inca Community. University of Iowa Press, Iowa City, 248 pp.
- NUÑEZ DEL PRADO, OSCAR. 1949. Chinchero: Un pueblo andino del Sur. *Revista de la Universidad de Cuzco*, 2nd sem., No. 97.
- ORLOVE, BENJAMIN S., AND R. GODOY. 1986. Sectoral fallowing systems in the central Andes. *Journal of Ethnobiology*, 6: 169–204.
- PACINI, DEBORAH, AND C. R. FRANQUEMONT, EDs. 1986. Coca and Cocaine: Effects on People and Policy in Latin America. Cornell Univ. Latin American Studies Program/Cultural Survival, Cambridge, Mass., 166 pp.
- PORTER, CEDRIC L. 1959. Taxonomy of Flowering Plants. W. H. Freeman, San Francisco, Calif., 472 pp.
- REAL ACADEMIA ESPAÑOLA. 1984. *Diccionario de la Lengua Española*, ed. 20. Madrid, 2 vols.
- ROSTWOROWSKI DE DIEZ CANSECO, MARIA. 1970. Los Ayarmaca. *Revista del Museo Nacional (Lima)*, 36: 58–101.
- ROWE, JOHN H. 1946. Inca culture at the time of the Spanish conquest, pp. 183–330. *In* Steward, Julian H., ed., *Handbook of South American Indians*. Vol. 2, The Andean Civilizations. Bulletin 143, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.
- SARMIENTO DE GAMBOA, PEDRO. 1907 (1572). Segunda parte de la historia general llamada yndica. English translation by Clements Markham. The Hakluyt Society, Cambridge, England, 395 pp.
- SCHULTES, RICHARD E. 1986. Recognition of variability in wild plants by Indians of the northwest Amazon: An enigma. *Journal of Ethnobiology*, 6: 229–238.
- SHERBONDY, JEANNETTE. 1982. The canal systems of Hanan Cuzco. Ph.D. diss., University of Illinois, Urbana.
- SOUKUP, JAROSLAV. 1970. *Vocabulario de los Nombres Vulgares de la Flora Peruana*. Colegio Salesiano, Lima, 381 pp.
- TOLEDO, FRANCISCO DE. 1974 (1575). *Visita general del Perú por el virrey Don Francisco de Toledo*. Edit. El Sol, Arequipa, Peru, 175 pp.
- TOSI, JOSEPH G. 1960. Zonas de vida natural en el Peru. Instituto Interamericano de Ciencias Agrícolas, Zona Andina. *Boletín Técnico* No. 5. Lima, 271 pp.
- TOWLE, MARGARET. 1961. *The Ethnobotany of Pre-Columbian Peru*. Aldine Publishing Co., Chicago, 180 pp.
- U.S. DEPARTMENT OF AGRICULTURE. 1971. *Preparing Herbarium Specimens of Vascular Plants*. Agricultural Research Service, Agriculture Information Bulletin No. 348, Washington, D.C., 29 pp.
- VALCÁRCEL ESPARZA, CARLOS. 1977. Túpac Amaru, Precursor de la Independencia. Universidad Nacional Mayor de San Marcos/OAS, Lima, 201 pp.
- VALDIZÁN, HERMILIO, AND A. MALDONADO. 1985 (1922). *La Medicina Popular Peruana*. Imprenta Torres Aguirre, Lima, 3 vols.
- VICKERS, WILLIAM T., AND T. PLOWMAN. 1984. Useful plants of the Siona and Secoya Indians of eastern Ecuador. *Fieldiana: Botany*, n.s., 15: 1–63.
- VILLANUEVA URTEAGA, HORACIO. 1982. Cuzco 1689: Informes de los párrocos al obispo Mollinedo. CERA bartolomé de las casas, Cusco, 508 pp.
- WEBERBAUER, AUGUSTO. 1945 (1911). *El Mundo Vegetal de los Andes Peruanos*. Ministerio de Agricultura, Lima.
- YACOVLEFF, E., AND F. HERRERA. 1934–1935. El mundo vegetal de los antiguos Peruanos. *Revista del Museo Nacional (Lima)* 3: 241–322; 4: 29–102.

Index of Local Names

Local name	Latin name	Family
achanqharas	<i>Begonia clarkei</i>	Begoniaceae
achira	<i>Canna × indica</i>	Cannaceae
achupaylla	<i>Puya ferruginea</i>	Bromeliaceae
achuqcha	<i>Cyclanthera brachybotrys</i>	Cucurbitaceae
k'ita achuqcha		
ahinhus	<i>Artemisia absinthium</i>	Compositae
albergas blancas	<i>Pisum sativum</i>	Leguminosae
albergas rojas		
alfa	<i>Melilotus indica</i>	Leguminosae
alfa alfa	<i>Medicago sativa</i>	
alfalfa	<i>Melilotus indica</i>	
falso alfalfa	<i>Crotalaria incana</i>	
alfalfa falsa	<i>Medicago lupulina</i>	
alpalla	<i>Melilotus indica</i>	
alosima	<i>Diploschistes aff. hypoleucus</i>	Lichen: Diploschistaceae
amapolas del campo	<i>Salvia verbenacea</i>	Labiatae
ambar ambar	<i>Argemone mexicana</i>	Papaveraceae
	<i>Cynanchum tarmense</i>	Asclepiadaceae
	<i>Sarcostemma solanoides</i>	
	<i>Dioscorea incayensis</i>	Dioscoreaceae
	<i>Dioscorea piperifolia</i>	
	<i>Phaseolus augustii</i>	Leguminosae
	<i>Senecio calcensis</i>	Compositae
ambrosacha		
angel tawna		
angel tawnin	<i>Loasa cuzcoensis</i>	Loasaceae
anis		
pampa anis	<i>Vilobia praetermissa</i>	Compositae
aña panku	<i>Datura stramonium ssp. ferox</i>	Solanaceae
panqu	<i>Erdisia aff. erecta</i>	Cactaceae
añu		
k'ita añu	<i>Tropaeolum tuberosum</i>	Tropaeolaceae
platáno añu		
sambo añu		
yaña añu		
yana ñawi		
aqha qupisun	<i>Calandrinia acaulis</i>	Portulacaceae
	<i>Valeriana micropterina</i>	Valerianaceae
aqy k'aqka	<i>Pilea serpyllacea</i>	Urticaceae
aselgas	<i>Rumex crispus</i>	Polygonaceae
atuq ulluku	<i>Ullucus tuberosus</i>	Basellaceae
avena	<i>Avena sterilis</i>	Gramineae
awarunkhu	<i>Puya weberbaueri</i>	Bromeliaceae
awilmantu	<i>Hebecladus sp.; Saracha herrerae</i>	Solanaceae
aya huqta	<i>Cheilanthes incarum</i>	Fern: Pteridaceae
ayaq t'ika	<i>Alonsoa meridionalis</i>	Scrophulariaceae
ayaq waqtan	<i>Cheilanthes pruinata</i>	Fern: Pteridaceae
	<i>Hypotrachyna sp.</i>	Lichen: Parmeliaceae
	<i>Xanthoparmelia peruviansis</i>	
bolsa bolsa	<i>Draba aff. cuzcoensis</i>	Cruciferae
boton boton	<i>Ranunculus breviscapus</i>	Ranunculaceae
buton buton	<i>Hydrocotyle urbaniana</i>	Umbelliferae
cabra cabra	<i>Cynanchum tarmense</i>	Asclepiadaceae
campanilla	<i>Fuchsia boliviana</i>	Onagraceae
chhilin campanilla	<i>Fuchsia apetala</i>	
capuli	<i>Prunus serotina ssp. capuli</i>	Rosaceae
cartucho	<i>Penstemon gentianoides</i>	Scrophulariaceae
cebada	<i>Hordeum vulgare</i>	Gramineae

Local name	Latin name	Family
cebolla cebolla	<i>Werneria nubigenia</i> <i>Werneria staticaefolia</i> <i>Mastigostyla</i> sp.	Compositae Iridaceae
cedron cedron	<i>Aloysia fiebrigii</i>	Verbenaceae
ch'ankil	<i>Elodea potamogeton</i>	Hydrocharitaceae
ch'apu ch'apu	<i>Teloschistes exilis</i> <i>Usnea</i> sp.	Lichen: Teloschistaceae Lichen: Usneaceae
ch'ñi phuytu	<i>Calceolaria sparsiflora</i>	Scrophulariaceae
ch'iqu ch'iqu	<i>Valeriana coarctata</i>	Valerianaceae
ch'ullqu (ch'ullku)	<i>Oxalis petrophila</i>	Oxalidaceae
pampa ch'ullqu (ch'ullku)		
ch'ullqus (ch'ullkus)	<i>Nothoscordum andicola</i> <i>Crotalaria incana</i> <i>Oxalis peduncularis</i> var. <i>pilosa</i>	Liliaceae Leguminosae Oxalidaceae
chachaquuma	<i>Escallonia resinosa</i>	Saxifragaceae
chawi chawi	<i>Valeriana coarctata</i>	Valerianaceae
chili chili	<i>Geranium patagonicum</i> <i>Geranium sessiliflorum</i> <i>Geranium weddellii</i> <i>Anemone helleborifolia</i>	Geraniaceae Ranunculaceae
chichira	<i>Hydrocotyle urbaniana</i>	Umbelliferae
chilka	<i>Lepidium bipinnatifidum</i>	Cruciferae
china china	<i>Baccharis latifolia</i>	Compositae
chinchamali	<i>Senecio herrerae</i>	Compositae
chinchirkuma	<i>Krameria lappacea</i>	Krameriaceae
chiquchi	<i>Mutisia acuminata</i>	Compositae
qhishwa ch'iqchi	<i>Berberis cliffortioides</i> <i>Berberis boliviana</i> <i>Berberis saxicola</i>	Berberidaceae
upa ch'iqchi		
chiquchipa	<i>Tagetes multiflora</i>	Compositae
chiqllumay	<i>Vallea stipularis</i>	Elaeocarpaceae
chiqllurway	<i>Vallea stipularis</i>	Elaeocarpaceae
chiri chiri	<i>Grindelia boliviana</i> <i>Thalictrum decipiens</i>	Compositae Ranunculaceae
chiwanway	<i>Stenomesson recurvatum</i> <i>Stenomesson incarnatum</i>	Amaryllidaceae
cilantro		
puna colander	<i>Daucus montanus</i>	Umbelliferae
culandro	<i>Oreomyrrhis andicola</i> <i>Coriandrum sativum</i> <i>Eremocharis triradiata</i>	
culantro pusan	<i>Thalictrum decipiens</i>	Ranunculaceae
culantro pusan	<i>Thalictrum decipiens</i>	Ranunculaceae
clavel	<i>Dianthus barbatus</i>	Caryophyllaceae
pampa clavel	<i>Calandrinia alba</i> <i>Calandrinia ciliata</i>	Portulacaceae
coca	<i>Erythroxylum coca</i>	Erythroxylaceae
inca coca	<i>Polypodium angustifolium</i> var. <i>angustifolium</i> <i>Polypodium buchtienii</i> <i>Polypodium</i> sp. (subg. <i>Polypodium</i>) <i>Polypodium</i> aff. <i>polypodioides</i>	Fern: Polypodiaceae
inca coca de la puna	<i>Pellaea ternifolia</i> var. <i>ternifolia</i>	Fern: Pteridaceae
coca coca	<i>Aphanactis villosa</i>	Compositae
cola de caballo	<i>Equisetum bogotense</i>	Equisetaceae
corbojo	<i>Lamium amplexicaule</i>	Labiatae
duraznillo	<i>Conyza canadensis</i> <i>Epilobium denticulatum</i> <i>Castilleja pseudopallescens</i>	Compositae Onagraceae Scrophulariaceae
durazno	<i>Prunus persica</i>	Rosaceae
durazno durazno	<i>Relbunium croceum</i> ssp. <i>involutum</i>	Rubiaceae
escobilla	<i>Cirsium vulgare</i>	Compositae

Local name	Latin name	Family
eucalipto, eucalistu	<i>Eucalyptus globulus</i>	Myrtaceae
fawka	<i>Flourensia polycephala</i>	Compositae
frutilla frutilla	<i>Fuchsia apetala</i>	Onagraceae
frutilla, k'ita frutilla	<i>Fragaria vesca</i>	Rosaceae
granadillas	<i>Passiflora pinnatistipula</i>	Passifloraceae
habas	<i>Vicia faba</i>	Leguminosae
paluqu habas		
puquchun habas		
puka habas		
q'umir habas		
habas blancas		
haminqay		
pampa haminqay	<i>Lysipomia laciniata</i> var. <i>laciniata</i>	Campanulaceae
hanq'as	<i>Lupinus</i> cf. <i>hornemanii</i>	Leguminosae
	<i>Lupinus prostratus</i>	
	<i>Lupinus</i> aff. <i>prostratus</i>	
	<i>Bartsia</i> sp., prob. nov.	Scrophulariaceae
hataqllu	<i>Myriophyllum quitense</i>	Halorrhagidaceae
hinojo	<i>Foeniculum vulgare</i>	Umbelliferae
husqa	<i>Dalea exilis</i>	Leguminosae
waña husqa	<i>Astragalus weddellianus</i>	
pampa husqa	<i>Dalea pazensis</i>	
huwisk'i	<i>Erdisia</i> aff. <i>erecta</i>	Cactaceae
ichu	<i>Brachypodium mexicanum</i>	Gramineae
	<i>Calamagrostis glacialis</i>	
	<i>Festuca dolichophylla</i>	
	<i>Festuca sublimis</i>	
	<i>Nasella</i> aff. <i>linearifolia</i>	
	<i>Nasella pubiflora</i>	
iri ichu	<i>Stipa ichu</i>	
ichu ichu	<i>Sisyrinchium junceum</i>	Iridaceae
	<i>Sisyrinchium laxum</i>	
	<i>Plantago lamprophylla</i>	Plantaginaceae
isphinhuy	<i>Aristeguietia</i> (<i>Eupatorium</i>) <i>discolor</i>	Compositae
k'anlli	<i>Senecio spinosus</i>	Compositae
k'aqla	<i>Opuntia</i> aff. <i>subulata</i>	Cactaceae
kamasayri	<i>Nicotiana undulata</i>	Solanaceae
kampachu	<i>Brugmansia</i> × <i>candida</i>	Solanaceae
kanchalawa	<i>Schkuhria pinnata</i>	Compositae
karwinchu	<i>Argemone mexicana</i>	Papaveraceae
khallampa		
pacha khallampa	<i>Morchella elata</i>	Fungi: Morchellaceae
	<i>Morchella esculenta</i>	
khana	<i>Munnozia lyrata</i>	Compositae
khishqa khana	<i>Sonchus asper</i>	
llampu khana	<i>Sonchus oleraceus</i>	
khisa		
chunchu khisa	<i>Caiophora rosulata</i>	Loasaceae
	<i>Urtica dioica</i>	Urticaceae
mula khisa	<i>Urtica dioica</i>	
puka t'ika khisa	<i>Caiophora cirsifolia</i>	Loasaceae
puka t'ikaq khisa	<i>Caiophora rosulata</i>	
puka t'ikayuy khisa	<i>Caiophora stenocarpa</i>	
puka t'ulluyuy khisa	<i>Urtica dioica</i>	Urticaceae
	<i>Urtica urens</i>	
suq'a khisa	<i>Phacelia pinnatifida</i>	Hydrophyllaceae
upa khisa	<i>Sonchus oleraceus</i>	Compositae
khishqa	<i>Erdisia</i> aff. <i>erecta</i>	Cactaceae
alka khishqa	<i>Cirsium vulgare</i>	Compositae
estrella khishqa	<i>Acicarpa procumbens</i>	Calyceraceae
t'anqar khishqacha	<i>Lycianthes lycioides</i>	Solanaceae

Local name	Latin name	Family
khishqa khishqa	<i>Datura stramonium</i> ssp. <i>ferox</i>	Solanaceae
khuchi khuchi	<i>Hypoxis decumbens</i>	Amaryllidaceae
	<i>Chloraea reticulata</i>	Orchidaceae
	<i>Anthericum eccremorrhizum</i>	Liliaceae
	<i>Anthericum herreriae</i>	
khunuqa	<i>Satureja boliviana</i>	Labiatae
pampa khunuqa	<i>Hedeoma mandonianum</i>	
khuytu	<i>Chenopodium quinoa</i> spp. <i>milleanum</i>	Chenopodiaceae
khuyu	<i>Scirpus californicus</i>	Cyperaceae
pampa khuyu	<i>Juncus dombeyanus</i>	Juncaceae
kiku	<i>Bidens andicola</i>	Compositae
	<i>Bidens pilosa</i>	
	<i>Ranunculus praemorsus</i> var. <i>praemorsus</i>	Ranunculaceae
hembra kiku	<i>Bidens andicola</i> var. <i>andicola</i>	Compositae
qhishwa kiku	<i>Bidens andicola</i>	
macho kiku	<i>Bidens andicola</i> var. <i>descomposita</i>	
kupalvu	<i>Alternanthera caracasana</i>	Amaranthaceae
kiswar	<i>Buddleja incana</i>	Loganiaceae
puna kiswar	<i>Buddleja coriacea</i>	
kiyawcha	<i>Epidendrum</i> cf. <i>densifolium</i>	Orchidaceae
	<i>Oncidium</i> cf. <i>aureum</i>	
kunquña	<i>Villadia virgata</i>	Crassulaceae
	<i>Peperomia galioides</i>	Piperaceae
	<i>Peperomia</i> sp.	
kuychi kuychi	<i>Villadia virgata</i>	Crassulaceae
lacre	<i>Siphocampylus tupaeformis</i>	Campanulaceae
lagre, lakre lakre	<i>Bartsia</i> cf. <i>bartsioides</i>	Scrophulariaceae
pampa lakre lakre	<i>Bartsia diffusa</i>	
	<i>Verbena hayekii</i>	Verbenaceae
puka t'ika lakre lakre	<i>Castilleja virgata</i>	Scrophulariaceae
lakre lakre	<i>Castilleja pumila</i>	
	<i>Castilleja virgata</i>	
	<i>Bartsia inaequalis</i>	
	<i>Bartsia diffusa</i>	
layu	<i>Trifolium amabile</i> var. <i>amabile</i>	Leguminosae
	<i>Trifolium amabile</i> var. <i>pentlandii</i>	
layu layu	<i>Trifolium amabile</i> var. <i>amabile</i>	
leche leche	<i>Ipomoea minima</i>	Convolvulaceae
pampa sunqu lirio	<i>Sisyrinchium caespitificum</i>	Iridaceae
lisa(s)		
atuq lisa	<i>Ullucus tuberosus</i>	Basellaceae
papas lisas		
phantasma lisas		
qhilla chuqcha lisas		
tiqtiharo lisas		
yuraq lisas		
zanahoria lisas		
arequipa lisas		
llanten llanten	<i>Malaxis excavata</i>	Orchidaceae
llaqhi	<i>Rumex crispus</i>	Polygonaceae
	<i>Rumex cuneifolius</i>	
llawlli	<i>Barnadesia berberoides</i>	Compositae
qhilla t'ikaq llawlli	<i>Chuquiraga spinosa</i>	Compositae
ruyaq llawlli	<i>Barnadesia berberoides</i> (vel aff.)	Compositae
uchu k'aspa llawllicha	<i>Chuquiraga spinosa</i>	
lluki	<i>Kakeneckia lanceolata</i>	Rosaceae
llullu	<i>Brassica campestris</i>	Cruciferae
llullucha	<i>Nostoc commune</i>	Algae: Nostocaceae
hamp'atu llullucha	<i>Anacystis aeruginosa</i>	Algae: Chroococcaceae
lluq'i lluq'i	<i>Linum oligophyllum</i>	Linaceae
lluthu lluthu	<i>Moschopsis</i> sp.	Calyceraceae
lluttu lluttu	<i>Hesperomeles lanuginosa</i>	Rosaceae
lomo lomo	<i>Hypseocharis bilobata</i> vel. aff.	Oxalidaceae

Local name	Latin name	Family
luraypu	<i>Echeveria</i> aff. <i>chiclensis</i> <i>Echeveria</i> aff. <i>peruviana</i>	Crassulaceae
macha macha	<i>Pernettya prostrata</i>	Ericaceae
maki maki	<i>Plagiochasma rupestre</i> <i>Athalamia andina</i> <i>Peltigera polydactyla</i> <i>Peltigera praetextata</i> <i>Sticta</i> aff. <i>boliviana</i> <i>Lunularia cruciata</i>	Hepaticae: Aytoniaceae Hepaticae: Cleveaceae Lichen: Peltigeraceae
malvas	<i>Malva parviflora</i>	Lichen: Stictaceae Hepaticae: Lunulariaceae
manka p'aki	<i>Stevia rhombifolia</i> var. <i>stephanacoma</i> <i>Mirabilis prostrata</i>	Malvaceae Compositae
manka paki	<i>Viguiera procumbens</i> <i>Eupatorium sternbergianum</i>	Nyctaginaceae Compositae
manzana	<i>Malus sylvestris</i>	Rosaceae
manzanilla	<i>Matricaria recutita</i>	Compositae
maransiras	Sp. indet. <i>Lobelia tenera</i>	Compositae Campanulaceae
q'ara maransiras	<i>Viola pygmaea</i>	Violaceae
margaritas	<i>Leucanthemum vulgare</i> <i>Werneria pygmaea</i> <i>Werneria villosa</i>	Compositae
markhu	<i>Ambrosia artemisioides</i>	Compositae
matiqllu	<i>Ranunculus breviscapus</i>	Ranunculaceae
maych'a		
hayaq maych'a	<i>Eupatorium pentlandianum</i> <i>Senecio rudbeckiifolius</i> <i>Eupatorium cuzcoense</i>	Compositae
llamaq mikhuna maych'a	<i>Senecio parvocapitatus</i> <i>Senecio rudbeckiifolius</i>	
maych'a maych'a qhura	<i>Arcytophyllum thymifolium</i>	Rubiaceae
mejorana		
puma mikhurana	<i>Castilleja pumila</i> <i>Veronica persica</i>	Scrophulariaceae
pampa mikhurana		
michi michi	<i>Draba</i> aff. <i>D. cuzcoensis</i> <i>Nasturtium officinale</i>	Cruciferae
mirmiñada	<i>Verbena hayekii</i>	Verbenaceae
molle	<i>Schinus molle</i>	Anacardiaceae
mostaza	<i>Brassica</i> aff. <i>B. nigra</i> or <i>B. juncea</i>	Cruciferae
mostazilla		
mayu mostazilla	<i>Nasturtium officinale</i> <i>Sisymbrium</i> cf. <i>oleraceum</i>	Cruciferae
much'u		
khuchi much'u	<i>Juncus imbricatus</i>	Juncaceae
caballuq muchun	<i>Juncus tenuis</i> var. <i>platycaulos</i>	
mullaka	<i>Muehlenbeckia vulcanica</i>	Polygonaceae
muña	<i>Mintostachys glabrescens</i>	Labiatae
muqu muqu	<i>Cyperus hermaphroditus</i> <i>Baccharis genistelloides</i> <i>Mirabilis prostrata</i>	Cyperaceae Compositae Nyctaginaceae
murmunkis	<i>Citharexylum pachyphyllum</i>	Verbenaceae
muthuy	<i>Senna versicolor</i>	Leguminosae
nabo	<i>Brassica campestris</i>	Cruciferae
naranja naranja	<i>Ephedra americana</i>	Gymno: Ephedraceae
negro uman	<i>Eryngium weberbaueri</i>	Umbelliferae
niwa	<i>Cortaderia jubata</i> <i>Cortaderia</i> sp. (sect. <i>Cortaderia</i>) <i>Lamprothyrsus hieronymi</i> <i>Lamprothyrsus hieronymi</i> <i>Muhlenbergia rigida</i> <i>Bothriochloa saccharoides</i>	Gramineae
q'usi niwa		

Local name	Latin name	Family
niwaq qhura	<i>Stipa ichu</i>	Gramineae
nogal	<i>Juglans neotropica</i>	Juglandaceae
nudo nudo	<i>Baccharis genistelloides</i>	Compositae
ñukhaw	<i>Cestrum conglomeratum</i>	Solanaceae
ñuñumiya	<i>Psoralea pubescens</i>	Leguminosae
	<i>Solanum nitidum</i>	Solanaceae
ñuñupunqa	<i>Euphorbia peplus</i>	Euphorbiaceae
	<i>Ipomoea minuta</i>	Convolvulaceae
	<i>Euphorbia huanchahana</i>	Euphorbiaceae
urqu ñuñupunqa	<i>Thalictrum decipiens</i>	Ranunculaceae
ñuqchu	<i>Salvia dombeyi</i>	Labiatae
	<i>Salvia oppositiflora</i>	
	<i>Salvia rhombifolia</i>	
	<i>Castilleja fissifolia</i>	Scrophulariaceae
ashñaq ñuqchu	<i>Alonsoa meridionalis</i>	Scrophulariaceae
ásul ñuqchu	<i>Lepechinia floribunda</i>	Labiatae
	<i>Plumbago coerulea</i>	Plumbaginaceae
	<i>Salvia sarmentosa</i>	Labiatae
saqraq ñuqchu	<i>Siphocampylus tupaeformis</i>	Campanulaceae
	<i>Salvia oppositiflora</i>	Labiatae
	<i>Alonsoa meridionalis</i>	Scrophulariaceae
velapi ñuqchu	<i>Siphocampylus tupaeformis</i>	Campanulaceae
oca	<i>Oxalis tuberosa</i>	Oxalidaceae
higos oca		
pawkar oca		
oca oca	<i>Oxalis petrophila</i>	Oxalidaceae
	<i>Oxalis</i> sp.	
pampa oca oca	<i>Oxalis petrophila</i>	
ortiga	<i>Urtica dioica</i>	Urticaceae
p'irqa	<i>Galinsoga quadriradiata</i>	Compositae
	<i>Bidens andicola</i> var. <i>descomposita</i>	
	<i>Heliopsis bupththalmoides</i>	
	<i>Stevia rhombifolia</i> var. <i>stephanacoma</i>	
	<i>Nicandra physalodes</i>	Solanaceae
p'ispita	<i>Acalypha aronioides</i>	Euphorbiaceae
p'isqu sillum	<i>Paronychia mandoniana</i>	Caryophyllaceae
p'isqu sisaq	<i>Metastelma</i> sp.	Asclepiadaceae
	<i>Arenaria lanuginosa</i>	Caryophyllaceae
	<i>Arenaria</i> cf. <i>digyna</i>	
	<i>Cerastium tucumanense</i>	
pachakuti	<i>Paranephelium uniflorus</i>	Compositae
paku yunqi	<i>Aciachne acicularis</i>	Gramineae
papa		
ch'iri papa: q'usi	<i>Solanum tuberosum</i>	Solanaceae
ch'iri papa: wañu		
imilla papa		
intiq papan	<i>Peperomia peruviana</i>	Piperaceae
	<i>Dioscorea ancashensis</i>	Dioscoreaceae
intiq papan, killaq papan	<i>Peperomia peruviana</i>	Piperaceae
	<i>Peperomia verruculosa</i>	
killaq papan	<i>Peperomia peruviana</i>	
	<i>Peperomia verruculosa</i>	
puka qumpis (papa)	<i>Solanum tuberosum</i>	Solanaceae
alka qumpis		
mariba		
qumpis		
papa blanca		
papa cusqueña		
papa mantaro		
ruyaq waña (papa)		
yana bole (papa)		

Local name	Latin name	Family
papa		
yana mariba (papa)		
yana papa: papa Olones		
yana suytu (papa)		
yana wiraqucha (papa)		
yungay (papa)		
virundis		
atuq papa	<i>Solanum acaule</i>	
	<i>Solanum tuberosum</i>	
paqpa	<i>Agave americana</i>	Amaranthaceae
paraqay		
sach'a paraqay	<i>Colignonia weberbaueri</i>	Nyctaginaceae
pasto	<i>Melica scabra</i>	Gramineae
	<i>Agropyron brevistaratum</i>	
arequipa pasto	<i>Capsella bursa-pastoris</i>	Cruciferae
kiru kiru pasto	<i>Selaginella</i> sp.	Selaginellaceae
pata pata pasto	<i>Nasella pubiflora</i>	Gramineae
sima pasto	<i>Poa horridula</i>	
sima sima pasto	<i>Mastigostyla</i> sp.	Iridaceae
urqu pasto	<i>Cyperus sesleroides</i>	Cyperaceae
wila wila pasto	<i>Gnaphalium cheiranthifolium</i>	Compositae
sonsa pasto	<i>Polypogon interruptus</i>	Gramineae
	<i>Alopecurus aequalis</i>	
pata kaqra	<i>Stevia macbridei</i> var. <i>anomala</i>	Compositae
pavitos	<i>Lathyrus longipes</i>	Leguminosae
	<i>Vicia andicola</i>	
hatun pawitus	<i>Lathyrus longipes</i>	
pampa pavitos	<i>Lathyrus longipes</i>	
	<i>Vicia andicola</i>	
pavititos	<i>Vicia andicola</i>	
puna pavitos		
uña pawituscha		
pawituscha		
paya paya	<i>Senecio herrerae</i>	Compositae
	<i>Nicandra physalodes</i>	Solanaceae
payqu	<i>Chenopodium ambrosioides</i>	Chenopodiaceae
	<i>Iresine celosia</i>	Amaranthaceae
	<i>Gomphrena elegans</i>	
anka payqu	<i>Chenopodium incisum</i>	Chenopodiaceae
perejil		
hamp'atu perejil	<i>Daucus montanus</i>	Umbelliferae
	<i>Niphogeton stricta</i>	
	<i>Oreomyrrhis andicola</i>	
purun perejil	<i>Lithospermum peruvianum</i>	Boraginaceae
suk'a perejil	<i>Daucus montanus</i>	Umbelliferae
phalcha	<i>Gentianella rima</i>	Gentianaceae
	<i>Nicandra physalodes</i>	Solanaceae
urqu phalcha	<i>Halenia weddelliana</i>	
pampa phalcha	<i>Gentiana dolichopoda</i>	
puna phalcha	<i>Gentiana persquarrosa</i>	
phalcha phalcha	<i>Gentiana dolichopoda</i>	Gentianaceae
phanti	<i>Cosmos peucedanifolius</i>	Compositae
k'ita phanti	<i>Onoseris albicans</i>	Compositae
phanti phanti		
phuya phuya	<i>Nothoscordum andicola</i>	Liliaceae
piki piki	<i>Baccharis boliviensis</i>	Compositae
pilli		
ch'aki pilli	Genus unknown	Compositae
ch'aran pilli	<i>Hypochoeris taraxacoides</i>	
charan pilli	<i>Taraxacum officinale</i>	
hayaq pilli	<i>Hypericum caespitosum</i>	Guttiferae
qhishwa pilli	<i>Hypochoeris chilensis</i>	Compositae
q'ara pilli	<i>Paranephelium uniflorus</i>	

Local name	Latin name	Family
pimpinilla	<i>Metastelma</i> sp.	Asclepiadaceae
puna pimpinilla	<i>Lathyrus longipes</i>	
qhishwa pimpinilla	<i>Chenopodium ambrosioides</i>	Chenopodiaceae
pinku pinku	<i>Arcytophyllum thymifolium</i>	Rubiaceae
	<i>Krameria lappacea</i>	Krameriaceae
	<i>Ephedra americana</i>	Ephedraceae
pinqayllikista	<i>Gentiana persquarrosa</i>	Gentianaceae
	<i>Gentiana microphylla</i>	
piris piris	<i>Salpichroa gayi</i>	Solanaceae
	<i>Clematis seemannii</i>	Ranunculaceae
puka t'ika	<i>Dahlia pinnata</i>	Compositae
putaqllanku	<i>Sicyos baderoa</i>	Cucurbitaceae
puya puya	<i>Nothoscordum fictile</i>	Liliaceae
q'armatu	<i>Nicotiana tomentosa</i>	Solanaceae
	<i>Senecio herrerae</i>	Compositae
q'ira	<i>Astragalus garbancillo</i>	Leguminosae
q'umu q'umu	<i>Luzula racemosa</i>	Juncaceae
q'utu q'utu	<i>Cyclanthera brachybotrys</i>	Cucurbitaceae
q'uya	<i>Festuca sublimis</i>	Gramineae
qalaywala	<i>Elaphoglossum</i> aff. <i>petiolatum</i>	Fern: Dryopteridaceae
	<i>Polypodium angustifolium</i> var. <i>angustifolium</i>	Polypodiaceae
pampa qalaywala	<i>Elaphoglossum</i> sp.	Fern: Dryopteridaceae
qhishwa qalaywala	<i>Polypodium crassifolium</i>	Polypodiaceae
china qalaywala	<i>Elaphoglossum</i> sp.	Fern: Dryopteridaceae
urqun qalaywala	<i>Elaphoglossum</i> sp.	Fern: Dryopteridaceae
qantu	<i>Cantua buxifolia</i>	Polemoniaceae
puka qantu		
qhilla qantu		
qhitu qhitsu	<i>Gamochaeta spicata</i>	Compositae
	<i>Gnaphalium mandonii</i>	
	<i>Gamochaeta spicata</i>	
hembra qhitsu qhitsu		
macho qhitsu qhitsu		
qhura		
aqha aqha qhura	<i>Salpichroa glandulosa</i> ssp. <i>glandulosa</i>	Solanaceae
ashñaq qhura	<i>Ranunculus praemorsus</i> var. <i>praemorsus</i>	Ranunculaceae
asñaq qhura	<i>Sigesbeckia jorullensis</i>	Compositae
khanan khanan qhura	<i>Sigesbeckia jorullensis</i>	
uq'i qhura	<i>Sigesbeckia jorullensis</i>	
	<i>Galinsoga mandonii</i>	Compositae
paya paya qhura	<i>Relbunium croceum</i> ssp. <i>involucratum</i>	Rubiaceae
	<i>Nicotiana tomentosa</i>	Solanaceae
piki piki qhura	<i>Quinchamalium procumbens</i>	Santalaceae
q'umu q'umu qhura	<i>Sisyrinchium laxum</i>	Iridaceae
suytu qhura	<i>Eupatorium volkensis</i>	Compositae
	<i>Bartsia</i> sp.	Scrophulariaceae
suytu suytu qhura	<i>Baccharis serrulata</i>	Compositae
qhuracha	<i>Galinsoga mandonii</i>	
qimsa kuchu	<i>Baccharis genistelloides</i>	Compositae
qiyuña	<i>Polylepis berterii</i>	Rosaceae
	<i>Polylepis incana</i>	
quinua	<i>Chenopodium quinoa</i>	Chenopodiaceae
k'ita quinua	<i>Chenopodium quinoa</i> ssp. <i>millea</i>	
ruyaq quinua	<i>Chenopodium quinoa</i>	
quncha	<i>Pleurocollybia cibaria</i>	Fungi: Tricholomataceae
inka quncha	Genus unknown	Fungi
llanka quncha	<i>Pleurocollybia</i> aff. <i>cibaria</i>	
qusmayllu	<i>Solanum arequipense</i>	Solanaceae
	<i>Solanum glandulosipilosum</i>	
qusmayllu wayq'u	<i>Solanum ochrophyllum</i>	
quwimira	<i>Erodium cicutarium</i>	Geraniaceae
rakha rakha	<i>Arracacia peruviana</i>	Umbelliferae

Local name	Latin name	Family
rakhacha	<i>Arracacia aequatorialis</i> <i>Arracacia xanthorrhiza</i> <i>Arracacia peruviana</i>	Umbelliferae
k'ita rakhacha puna rakhacha		
raki raki	<i>Asplenium monanthos</i> <i>Cystopteris fragilis</i> <i>Polystichum cochleatum</i> <i>Polystichum montevidense</i> <i>Polystichum orbiculatum</i> <i>Cheilanthes marginata</i> <i>Cheilanthes pruinata</i>	Fern: Aspleniaceae Fern: Dryopteridaceae Fern: Pteridaceae
mayupi raki raki pampa raki raki urqun raki raki	<i>Thelypteris glandulosolanosa</i> <i>Thelypteris nitens</i> <i>Thelypteris rufa</i> <i>Thelypteris nitens</i> <i>Cystopteris fragilis</i> <i>Cheilanthes marginata</i>	Fern: Thelypteridaceae Fern: Thelypteridaceae Fern: Dryopteridaceae Fern: Pteridaceae
rama, grama	<i>Pennisetum clandestinum</i>	Gramineae
ramos ramos	<i>Bomarea dulcis</i> <i>Bomarea andimarcana</i> <i>Bomarea ovata</i> <i>Bomarea dulcis</i>	Amaryllidaceae
ramos de la quebrada	<i>Galium aparine</i> <i>Galium weberbaueri</i> <i>Relbunium croceum</i> ssp. <i>involucratum</i>	Rubiaceae
rata rata	<i>Spartium junceum</i> <i>Ruta graveolens</i> <i>Eremocharis triradiata</i> <i>Urocarpidium shepardae</i> <i>Opuntia</i> sp.	Leguminosae Rutaceae Umbelliferae Malvaceae Cactaceae
retama		
ruda		
qhishwa ruda		
ruphu		
ruq'a		
q'ara ruq'a inka ruq'a		
ruk'i	<i>Colletia spinosissima</i>	Rhamnaceae
rurutillu	<i>Datura stramonium</i> ssp. <i>ferox</i>	Solanaceae
salli pupuha	<i>Saxifraga magellanica</i>	Saxifragaceae
salvahina	<i>Tillandsia usneoides</i>	Bromeliaceae
salvia	<i>Lepechinia meyenii</i>	Labiatae
salvia del cerro	<i>Tillandsia recurvata</i>	Bromeliaceae
salvia ñuqchu	<i>Salvia oppositiflora</i>	Labiatae
salwahi	<i>Tillandsia usneoides</i>	Bromeliaceae
sambho quluta	<i>Monnina amarella</i>	Polygalaceae
san borja		
puna san borgue	<i>Onoseris albicans</i>	Compositae
sangra sangra	<i>Descurainia myriophyllum</i> <i>Descurainia titicacensis</i> <i>Brassica campestris</i> <i>Artemisia absinthium</i> <i>Tanacetum parthenium</i>	Cruciferae
urqun sangra sangra	<i>Zea mays</i>	Compositae
santa lucia	<i>Anthericum eccremorrhizum</i>	Compositae
santa mayra	<i>Aa matthewsii</i> <i>Altensteinia elliptica</i> <i>Chloraea reticulata</i> <i>Malaxis excavata</i> <i>Valeriana coarctata</i> <i>Valeriana micropterina</i> <i>Commelina tuberosa</i>	Gramineae Liliaceae Orchidaceae
sara	<i>Sambucus peruviana</i> <i>Oenothera versicolor</i> <i>Bidens pilosa</i> <i>Festuca quadridentata</i> <i>Poa</i> aff. <i>horridula</i>	Caprifoliaceae Onagraceae Compositae Gramineae
sara sara		
sauk'u		
saya saya		
silk'iwa		
sima		

Local name	Latin name	Family
sima sima	<i>Sisyrinchium praealtum</i>	Iridaceae
suphu suphucha	<i>Hieracium mandonii</i>	Compositae
suka rura	<i>Senecio calceus</i>	Compositae
	<i>Arcytophyllum thymifolium</i>	Rubiaceae
sullullumay	<i>Vallea stipularis</i>	Elaeocarpaceae
sunch'u	<i>Viguiera pazensis</i>	Compositae
	<i>Viguiera procumbens</i>	Compositae
sunchus		
sunkha		
kaka sunqi	<i>Breutelia nigrescens</i>	Moss: Bartramiaceae
	<i>Zygodon pichinchensis</i>	Moss: Orthotrichaceae
qaqa sunkha	<i>Tillandsia capillaris</i>	Bromeliaceae
	<i>Tillandsia recurvata</i>	
	<i>Umbilicaria peruviana</i>	Lichen: Gyrophoraceae
supay kayqu	<i>Cetrariastrum cf. nigrociliatum</i>	Lichen: Parmeliaceae
supu supu	<i>Nicotiana glauca</i>	Solanaceae
suq'a rura	<i>Azorella multifida</i>	Umbelliferae
sutuma	<i>Cardiospermum halicacabrum</i>	Sapindaceae
	<i>Lysipomia laciniata</i> var. <i>vulgaris</i>	Campanulaceae
	<i>Perezia pinnatifida</i>	Compositae
	<i>Perezia pungens</i>	
pampa sutuma	<i>Conyza deserticola</i>	
	<i>Phacelia secunda</i>	Hydrophyllaceae
t'anqar	<i>Dunalia spinosa</i>	Solanaceae
	<i>Duranta cf. mandonii</i>	Verbenaceae
qhishwa t'anqar	<i>Lycianthes lycioides</i>	Solanaceae
yuraq t'ika t'anqar		
t'asta	<i>Escallonia myrtilloides</i>	Saxifragaceae
tanqa		
puma tanqa	<i>Azorella multifida</i>	Umbelliferae
taruqa ñuñu	<i>Wahlenbergia peruviana</i>	Campanulaceae
tarwi	<i>Lupinus mutabilis</i>	Leguminosae
ruyaq tarwi		
ásul tarwi		
tarwi	<i>Lupinus aff. hornemanii</i>	Leguminosae
tarwi tarwi	<i>Astragalus uniflorus</i>	
tayanqa	<i>Lupinus prostratus</i>	
pampa tayanqa	<i>Baccharis tricuneata</i> var. <i>robusta</i>	Compositae
tintin	<i>Baccharis caespitosa</i> var. <i>alpina</i>	Compositae
tintincha	<i>Passiflora mixta</i>	Passifloraceae
k'ita tintincha	<i>Passiflora gracilis</i>	Passifloraceae
tiqllay warmi	<i>Senecio erosus</i>	Compositae
trago trago	<i>Oxalis steinbachii</i>	Oxalidaceae
	<i>Oxalis</i> sp.	
trebol	<i>Medicago hispida</i>	Leguminosae
trebol de la quebrada	<i>Thalictrum podocarpum</i>	Ranunculaceae
trigo	<i>Triticum aestivum</i>	Gramineae
turphuy	<i>Nototriche cf. pearcei</i>	Malvaceae
uchu k'aspa	<i>Calendula officinalis</i>	Compositae
unka unka	<i>Hesperomeles lanuginosa</i>	Rosaceae
uphuy suru	<i>Bowlesia flabilis</i>	Umbelliferae
uq'i uq'i	<i>Capsella bursa-pastoris</i>	Cruciferae
uqururu	<i>Mimulus glabratus</i>	Scrophulariaceae
varilla varilla	<i>Bomarea andimarcana</i>	Amarylidaeae
verbena	<i>Verbena hispida</i>	Verbenaceae
	<i>Oenothera rosea</i>	Onagraceae
pampa verbena	<i>Verbena hayekii</i>	Verbenaceae
verguylawas	<i>Boussingaultia</i> sp. aff. <i>diffusa</i>	Basellaceae
violetas	<i>Lobelia tenera</i>	Campanulaceae
puna violetas		

Local name	Latin name	Family
waka waka	<i>Sarcostemma lysimachioides</i>	Asclepiadaceae
wakaq khallun	<i>Plantago australis</i> ssp. <i>pseudomollior</i>	Plantaginaceae
wakatay	<i>Tagetes terniflora</i>	Compositae
wallpa wallpa	<i>Viola pygmaea</i>	Violaceae
wallwa	<i>Psoralea pubescens</i>	Leguminosae
wamanpito	<i>Columellia obovata</i>	Columelliaceae
waranway	<i>Tecoma stans</i>	Bignoniaceae
wayq'untuy	<i>Tillandsia oroyensis</i>	Bromeliaceae
wayrakuma	<i>Mutisia cochabambensis</i>	Compositae
waysillu	<i>Fuchsia apetala</i>	Onagraceae
wihuhu	<i>Tillandsia usneoides</i>	Bromeliaceae
	<i>Phaseolus augustii</i>	Leguminosae
wila wila	<i>Hieracium mandonii</i>	Compositae
	<i>Gnaphalium mandonii</i>	
wilk'u	<i>Ipomoea piurensis</i>	Convolvulaceae
	<i>Cologania pulchella</i>	Leguminosae
willk'u	<i>Cuscuta globifera</i>	Convolvulaceae
	<i>Phaseolus augustii</i>	Leguminosae
willq'u	<i>Cuscuta corymbosa</i>	Convolvulaceae
	<i>Nicandra physalodes</i>	Solanaceae
wilq'u	<i>Dioscorea piperifolia</i>	Dioscoreaceae
winku siki	<i>Cora pavonia</i>	Lichen: Theleporaceae
winku winku	<i>Dichondra sericea</i>	Convolvulaceae
	<i>Verbesina pflanzii</i>	Compositae
wiñay wayna		
china wiñay wayna	<i>Lycopodium clavatum</i>	Lycopodiaceae
	<i>Lycopodium</i> spp. <i>contiguum</i>	
urqu wiñay wayna	<i>Lycopodium crassum</i> vel aff.	
	<i>Tillandsia nana</i>	Bromeliaceae
wira q'uyá	<i>Onoseris albicans</i>	Compositae
yana waqta	<i>Asplenium</i> aff. <i>divaricatum</i>	Fern: Aspleniaceae
yawar ch'unqa	<i>Hebecladus</i> sp., <i>Saracha herrerae</i>	Solanaceae
	<i>Oenothera rosea</i>	Onagraceae
	<i>Silene mandonii</i>	Caryophyllaceae
yawar ch. de las punas	<i>Oenothera multicaulis</i>	Onagraceae
mayu yawar ch'unka	<i>Epilobium denticulatum</i>	
qhillu t'ika yawar ch.	<i>Oenothera multicaulis</i>	
yerba de billarga	<i>Hieracium mandonii</i>	Compositae
	<i>Malaxis excavata</i>	Orchidaceae
yerba de cancer	<i>Stachys aperta</i>	Labiatae
	<i>Salvia rhombifolia</i>	
yunqu	Genus unknown	Moss: Family indet.
yuyay hapichinkiy t'ika	<i>Zinnia peruviana</i>	Compositae
zapatillas	<i>Calceolaria scapiflora</i>	Scrophulariaceae
	<i>Calceolaria sparsiflora</i>	
	<i>Calceolaria tripartita</i>	
mayu zapatillas		

General Index

List of generic, family (capitalized), and local (italicized) names.

- Aa 87
 Acaena 94
 Acalypha 67
 Acaulimalva 85
achangharas 45
achira 19, 48
achupaylla 46
achugcha 65
 Aciachne 10, 69
 Acicarpha 47
 Adesmia 79
 Adiantum 38
 Agave 41
 Agropyron 70
ahinhus (ajenjo) 52
albergas (arvejas) 27, 82
alfa 81
alfalfa 80–81
 Allocarya 45
allpalla 33
 Alonsoa 96
 Alopecurus 70
alosima 79
 Aloysia 106
 Alstroemeria 41
 Altensteinia 87
 Alternanthera 41
amapolas del campo 89
 AMARANTHACEAE 41
 Amaranthus 23
 AMARYLLIDACEAE 41
ambar ambar 42, 66, 82
 AMBLYSTEGIACEAE 34
ambrosacha 59
 Ambrosia 16, 51
 Amsinckia 45
aña panku 99
aña panqu 47
 ANACARDIACEAE 42
 Anacystis 34
 Anemone vii, 93
angel tawna 84
anis (anís) 62
 Anthericum 17, 83
añu 19, 102
 Aphanactis 51
aqha qupisun 92, 105
aquy k'aqka 105
 Arcytophyllum 95
 Arenaria 48
 Argemone 89
 Arisaema 107
 Aristeguietia 51
 Arracacia 19, 22, 103
 Artemisia 51
 ASCLEPIADACEAE 42
aselgas 92
 ASPLENIACEAE 36
 Asplenium 36
 Astragalus 14, 79
 Athalamia 35
 Avena 27, 70
avena 70
awarunkhu 46
awilmantu 100
ayaq t'ika 97
ayaq waqtan 33, 39
ayllu(s) 5, 7–9, 11, 15, 18, 29
ayni 9
 AYTONIACEAE 35
 Azolla 39
 Azorella 103
 Baccharis 52
 Barnadesia 16, 53
 BARTRAMIACEAE 35
 Bartsia 98, 107
 BASELLACEAE 42
 Begonia 45
 BEGONIACEAE 45
 BERBERIDACEAE 45
 Berberis 45
 Bidens 16, 53, 107
 BIGNONIACEAE 45
bolsa bolsa 64
 Bomarea 41
 BORAGINACEAE 45
 Bothriochloa 70
boton boton 93
 Bougueria 91
 Boussingaultia 25, 42
 Bowlesia 103
 Brachyotum 86
 Brachypodium 10, 71
 Brassica 11, 20, 25, 64
 Breutelia 35
 BROMELIACEAE 46
 Brugmansia 99
 Buddleja 5, 25, 85
buton buton 104
cabra cabra 42
 CACTACEAE 47
 Caiophora 84
 Calamagrostis 10, 71
 Calandrinia 92
 Calceolaria 98
 Calendula 54
 CALYCERACEAE 47
campanilla 87
 CAMPANULACEAE 47
 Campyloneuron 37
 Canna 19, 22, 48
 CANNACEAE 48
 Cantua 91
 CAPRIFOLIACEAE 48
 Capsella 64
capuli 12, 27, 95
 Cardiospermum 96
cartucho 99
 CARYOPHYLLACEAE 48
 Castilleja 98
cebada 27, 72
cebolla cebolla 62, 76
cedron cedron 106
 Cerastium 49
 Cestrum 99
 Cetrariastrum 33
ch'ankil 75
ch'apu ch'apu 34
ch'iñi phuytu 98
ch'iqu ch'iqu 105
ch'ullku(s) 80, 84, 88
ch'ullqu(s) 88
ch'uñu 19–22, 102
chachaquma 96
chawi chawi 105
 Cheilanthes 38
 CHENOPODIACEAE 49
 Chenopodium 19, 49
chichira 64
chili chili vii, 68–69, 93, 104
chilka 53
china china 59
chinchamali 78
chinchirkuma 58
chiqchi 45
chiqchipa 60
chiqlumäy 66
chiqlurway 66
 Chloraea 88
 CHROOCOCCACEAE 34
 Chuquiraga 55
cilantro 93, 105
 Cirsium 55
 Citharexylum 106
clavel 92
 Clematis 93
 CLEVEACEAE 35
coca 66
coca coca 51
cola de caballo 40
 Colignonia 86
 Colletia 93
 Cologania 80
 Columellia 50
 COLUMELLIACEAE 50
 Commelina 51
 COMMELINACEAE 51
 COMPOSITAE 51
 CONVULVACEAE 63
 Conyza 55
 Cora 34

corbojo 78
 Coriandrum 103
 Cortaderia 12, 71
 Cosmos 55
 CRASSULACEAE 63
 Crotalaria 80
 CRUCIFERAE 64
 CUCURBITACEAE 65
 CUNONIACEAE 65
 Cuscuta 63
 Cyclanthera 65
 CYPERACEAE 65
 Cynanchum 42
 Cyperus 65
 Cystopteris 36

Dahlia 55
 Dalea 80
 Datura 99
 Daucus 103
 Dennstaedtia 36
 DENNSTAEDTIACEAE 36
 Descurainia 64
 Dianthus 49
 Dichondra 63
 Dioscorea 66
 DIOSCOREACEAE 66
 DIPLOSCHISTACEAE 33
 Diploschistes 18, 33
 Distichlis 71
 Draba 64
 DRYOPTERIDACEAE 36
 Dumortiera 36
 Dunalia 99
 Duranta 106
duraznillo 55, 86
durazno 95
durazno durazno 95

Echeveria 63
 ELAEOCARPACEAE 66
 Elaphoglossum 36
 Elodea 75
 Ephedra 40
 EPHEDRACEAE 40
 Epidendrum 88
 Epilobium 86
 EQUISETACEAE 40
 Equisetum 40
 Erdisia 47
 Eremocharis 103
 ERICACEAE 66
 Erodium 68
 Eryngium 25, 104
 ERYTHROXYLACEAE 66
 Erythroxylum 66
 Escallonia 96
escobilla 55
eucalpto 86
eucalistu 86
 Eucalyptus 86
 Eupatorium 56
 Euphorbia 25, 67

EUPHORBIACEAE 67
 Everniopsis 34

faena 9
fawka 56
 Festuca 10–11, 71
 Flourensia 56
 Foeniculum 104
 Fragaria 94
frutilla 94
frutilla frutilla 17, 87
 Fuchsia 17, 87

Galinsoga 56
 Galium 95
 Gamochaeta 56
 Gentiana 67
 GENTIANACEAE 67
 Gentianella 11, 68
 GERANIACEAE 68
 Geranium vii, 68
 Gnaphalium 56
 Gomphrena 41
 GRAMINEAE 69
granadillas 89
 Grindelia 57
 GUTTIFERAE 74
 GYROPHORACEAE 33

habas 83
 Hackelia 46
 Halenia 25, 68
 HALORRHAGIDACEAE 75
hamingay 48
hampi 17
hang'as 80–81, 98
hataqllu 75
 Hebecladus 100
 Hedeoma 78
 Heliopsis 57
 Heliotropium 46
 Hesperomeles 94
 Hesperoxiphion 76
 Hieracium 57
hinojo 104
 Hordeum 27, 72
husqa 80
huwisk'i 47
 HYDROCHARITACEAE 75
 Hydrocotyle vii, 104
 HYDROPHYLLACEAE 75
 Hypericum 74
 Hypochaeris 57
 Hypotrachyna 33
 Hypoxis 17, 42
 Hypseocharis 16, 88

ichu 71–73
ichu ichu 77

inca coca 38–39
 Ipomoea 63
 Iresine 41
 IRIDACEAE 76
isphinhuy 51

JUGLANDACEAE 77
 Juglans 77
 JUNCACEAE 77
 Juncus 11, 77
 Jungia 57

k'anlli 60
k'aqlla 47
 Kakenekia 94
kamasayri 100
kampachu 99
kanchalawa 59
karwinchu 89
khallampa 32
khana 58, 60
khisa 60, 75, 84, 104
khishqa 47, 55, 99
khishqa khishqa 99
khuchi khuchi 42, 83, 88
khunuqa 79
khuytu 50
khuyu 65, 77
kiku 53, 93
kipalvu 41
kiswar 85
kiwicha 23
kiyawcha 88
 Krameria 78
 KRAMERIACEAE 78
kunquña 63, 90
kuychi kuychi 63

LABIATAE 78
 Lachemilla 94
lacre 48
lacre lacre 99, 106
 Lamium 78
 Lamprothyrus 72
 Lathyrus 80
layu 82
layu layu 82
leche leche 63
 LEGUMINOSAE 79
 Lemna 83
 LEMNACEAE 83
 Lepechinia 78
 Lepidium 64
 Lepista 32
 Leucanthemum 57
 LILIACEAE 83
 LINACEAE 84
 Linum 84
lirio 76
lisa(s) 19, 43

Lithospermum 46
 llanten llanten 88
 llaqhi 92
 llawlli 53, 55
 lluki 94
 llullu 64
 llullucha 34
 llug'i llug'i 84
 lluthu lluthu 47
 llutu llutu 94
 Loasa 84
 LOASACEAE 84
 Lobelia 47
 Lobivia 47
 LOGANIACEAE 85
 Lolium 72
 lomo lomo 88
 Lunularia 35
 LUNULARIACEAE 35
 Lupinus 19, 81
 luraypu 63
 Luzula 77
 Lycianthes 100
 LYCOPODIACEAE 40
 Lycopodium 40
 Lysipomia 48

macha macha 66
 maize 11
maki maki 33, 35
 Malaxis 88
 Malus 27, 94
 Malva 85
 MALVACEAE 85
malvas 85
mañay 10
manka p'aki (paki) 56, 60, 62, 86
manzana 94
manzanilla 58
maransiras 48, 63, 106
 Marchantia 36
 MARCHANTIACEAE 36
margaritas 58, 62
 Margyricarpus 94
markhu 51
 Masdevallia 88
 Mastigostyla 76
matigllu 93
 Matricaria 58
maway 20
maych'a 56, 59
 Medicago 81
mejorana 98–99
 MELASTOMATACEAE 86
 Melica 72
 Melilotus 81
 Mentzelia 84
 Metastelma 42
michi michi 65
 Mimulus 99
minkha 9
 Minthostachys 19, 78
 Mirabilis 86
mirmiñada 106
 MNIACEAE 35

molle 42
 Monnina 92
 Morchella 32
 MORCHELLACEAE 32
 Moschopsis 47
mostaza 64
mostazilla 65
much'u 77
 Muehlenbeckia 92
 Muhlenbergia 72
mullaka 92
muña 78
 Munnozia 58
muqu muqu 52, 65, 86
murmunkis 106
muthuy 82
 Mutisia 58
muyuy 10
 Myriophyllum 75
 MYRTACEAE 86

nabo 64
naranja naranja 40
 Nasella 10, 72
 Nasturtium 64
negro uman 104
 Nicandra 100
 Nicotiana 12, 17, 100
 Niphogeton 104
niwa 70–72
niwaq qhura 73
nogal 77
 Nostoc 34
 NOSTOCACEAE 34
 Notholaena 39
 Nothoscordum 84
 Nototriche 10–11, 85
nudo nudo 52
ñukhaw 99
ñuñumiya 82, 101
ñuñupunqa 63, 67, 93
ñuqchu 48, 78, 91, 98
 NYCTAGINACEAE 86

oca 19, 88
oca oca 88
 Oenothera 87
 ONAGRACEAE 86
 Oncidium 88
 Onoseris 58
 Opuntia 47
 ORCHIDACEAE 87
 Oreomyrrhis 105
 Oritrophium 58
 ORTHOTRICHACEAE 35
ortiga 104
 OXALIDACEAE 88
 Oxalis 19, 88

p'irqa 53, 56–57, 60, 100
p'ispita 67

p'isqu sillum 49
p'isqu sisaq 42
pachakuti 58
paku yunqi 69
pampa 11–13
papa 19, 102
 PAPAVERACEAE 89
paqpa 41
 Paranephelius 58
paraqay 86
 PARMELIACEAE 33
 Paronychia 49
 Passiflora 12, 27, 89
 PASSIFLORACEAE 89
pasto 39, 57, 64–65, 70, 72–73, 76
pata kaqra 60
pavitos 80, 82
paya paya 59, 100
payqu 41, 49
 Pellaea 39
 Peltigera 33
 PELTIGERACEAE 33
 Pennisetum 72
 Penstemon 99
 Peperomia 22, 91
perejil 46, 104
 Perezia 58, 107
 Pernettya 66
 Phacelia 76
phalcha 67–68
phalcha phalcha 67
phanti 55, 58
 Phaseolus 81
phuya phuya 84
piki piki 52
 Pilea 104
pilli 57–58, 61, 75
pimpinilla 42, 49, 80
pinku pinku 40, 78, 95
pinqayllikista 67
 PIPERACEAE 90
piris piris 93, 100
 Pisum 27, 82
 Plagiochasma 35
 Plagiomnium 35
 PLANTAGINACEAE 91
 Plantago 91
 Pleurocollybia 33
 PLUMBAGINACEAE 91
 Plumbago 91
 Poa 73
 POLEMONIACEAE 91
 POLYGALACEAE 92
 POLYGONACEAE 92
 Polyplepis 5, 25, 94
 POLYPODIACEAE 37
 Polypodium 25, 38
 Polypogon 73
 Polystichum 37
 PORTULACACEAE 92
 potato 12, 19
 Prunus 12, 27, 95
 Psoralea 82
 PTERIDACEAE 38
 Pteris 39
puka t'ika 55

puna 10
putaqlanku 65
Puya 46
puya puya 84

q'armatu 59, 100
q'ira 79
q'umu q'umu 77
q'utu q'utu 65
q'uya 72
qalaywala 36, 38
qantu 91
qhishwa 5, 10–12
qhitu qhitu 56
qhura 53, 56, 77, 93, 95–96, 98, 100–101
qimsa kuchu 52
qiyuña 94
Quinchamalium 96
quinoa 19
quinua 19, 49–50
quncha 33
qusmayllu 101
quwimira 68

rakha rakha 103
rakhacha 19, 103
raki raki 36–38, 40
rama 72
ramos 41
 RANUNCULACEAE 92
Ranunculus 93
Raphanus 65
rata rata 95
Relbunium 95
retama 82
 RHAMNACEAE 93
Ribes 96
 ROSACEAE 94
 RUBIACEAE 95
ruda 95, 103
ruk'i 93
Rumex 92
ruphu 86
ruq'a 47
rurutillu 99
Ruta 25, 95, 107
 RUTACEAE 95

salli pupuha 96
Salpichroa 100
salvahina 46
Salvia 78
salvia 46, 78
 SALVINIACEAE 39
salwahi 46
sambho quluta 92
Sambucus 48
san borja 58
sangra sangra 64

santa lucia 51
santa mayra 60
 SANTALACEAE 96
 SAPINDACEAE 96
sara 74
sara sara 51, 83, 87–88, 105
Saracha 101
Sarcostemma 42
Satureja 79
sauc'u 48
Saxifraga 96
 SAXIFRAGACEAE 96
saya saya 87
Schinus 42
Schkuhria 59
Sciaromium 34
Scirpus 65
 SCROPHULARIACEAE 96
Selaginella 39
 SELAGINELLACEAE 39
Senecio 13, 59
Senna 16, 82
Sicyos 65
Sigesbeckia 60
Silene 49
silk'iwa 54
sima 71, 73
sima sima 77
Siphocampylus 48
Sisymbrium 65
Sisyrinchium 77
 SOLANACEAE 99
Solanum 101
Sonchus 60
Spartium 82
Stachys 79
Stenomesson 25, 42
Stevia 60
Sticta 33
 STICTACEAE 33
Stipa 10, 73
suka rura 59, 95
sullullumay 66
sunch'u 62
sunkha 33, 46
sunqi 35
supay kayqu 100
suphu suphucha 57
supu supu 103
suq'a rura 96
sutuma 48, 58

t'anqar 100, 106
t'asta 96
Tagetes 25, 60
Tanacetum 60
tanga 103
tapura 19
Taraxacum 61
Targionia 36
 TARGIONIACEAE 36
taruqa ñuñu 48
tarwi 19
tarwi tarwi 79, 81

tayanqa 53
Tecoma 45
 TELOSCHISTACEAE 33
Teloschistes 33
Thalictrum 93
 THELEPHORACEAE 34
 THELYPTERIDACEAE 40
Thelypteris 40
Tillandsia 46
tintin 89
tiqllay warmi 59
trago trago 89
trebol 81, 93
 TRICHOLOMATACEAE 32
Trifolium 82
trigo 74
Trisetum 73
Triticum 27, 73
 TROPAEOLACEAE 102
Tropaeolum 102
turphuy 85

uchu k'aspa 54
Ullucus 19, 43
 UMBELLIFERAE 103
Umbilicaria 33
unka unka 94
uphuy suru 104
uq'i uq'i 64
uqururu 99
Urocarpidium 86
urqu 5
Urtica 105
 URTICACEAE 104
Usnea 34
 USNEACEAE 34

Valeriana 105
 VALERIANACEAE 105
Vallea 66
varilla varilla 41
Verbena 106
verbena 87, 106
 VERBENACEAE 106
Verbesina 61
verguylawas 43
Veronica 99
Vicia 26, 82–83
Viguiera 62
Villadia 63
Villobia 62
Viola 10, 106
 VIOLACEAE 106
violetas 47

Wahlenbergia 48
waka waka 42
wakaq khallun 91
wakatay 60
wallpa wallpa 106

wallwa 82
wamanpito 51
waranway 45
wayq'untuy 46
wayrakuma 58
waysillu 87
Weinmannia 65
Werneria 10, 62
wihuhu 47, 82
wila wila 57
wilk'u 63, 80
willk'u 63, 81
willq'u 63, 100
wilq'u 66

winku siki 34
winku winku 62–63
wiñay wayna 40, 46
wira q'uyá 58
Woodsia 37

Xanthoparmelia 33

yana waqta 36
yawar ch'unqa 49, 56, 86–87, 100

yerba de billarga 57, 88
yerba de cancer 79
yunqu 35
yuyay hapichinkiy t'ika 62

zapatillas 98
Zea 21, 74
Zinnia 62
Zygodon 35



Field Museum of Natural History
Roosevelt Road at Lake Shore Drive
Chicago, Illinois 60605-2496
Telephone: (312) 922-9410





UNIVERSITY OF ILLINOIS-URBANA



3 0112 001367876